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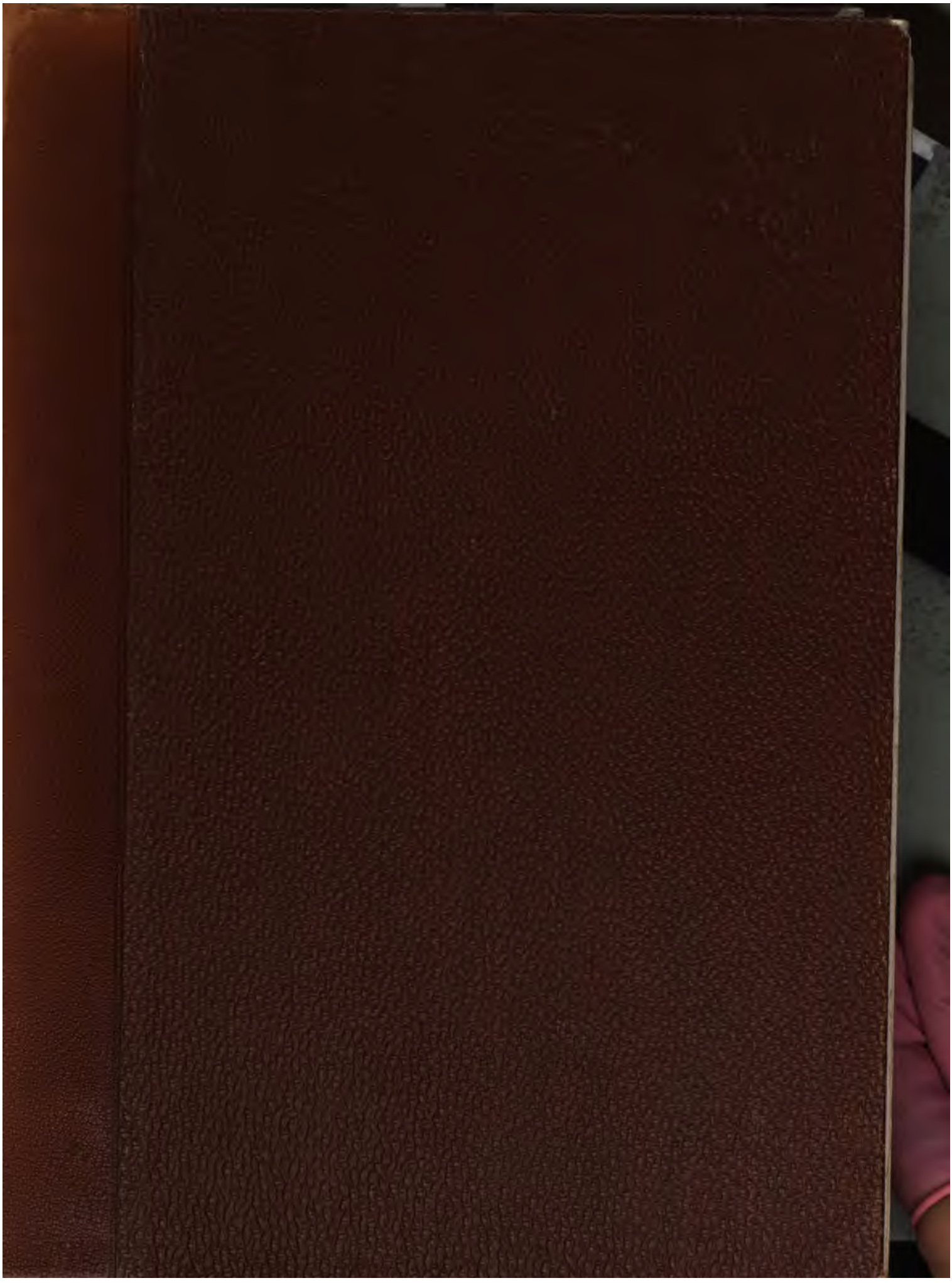

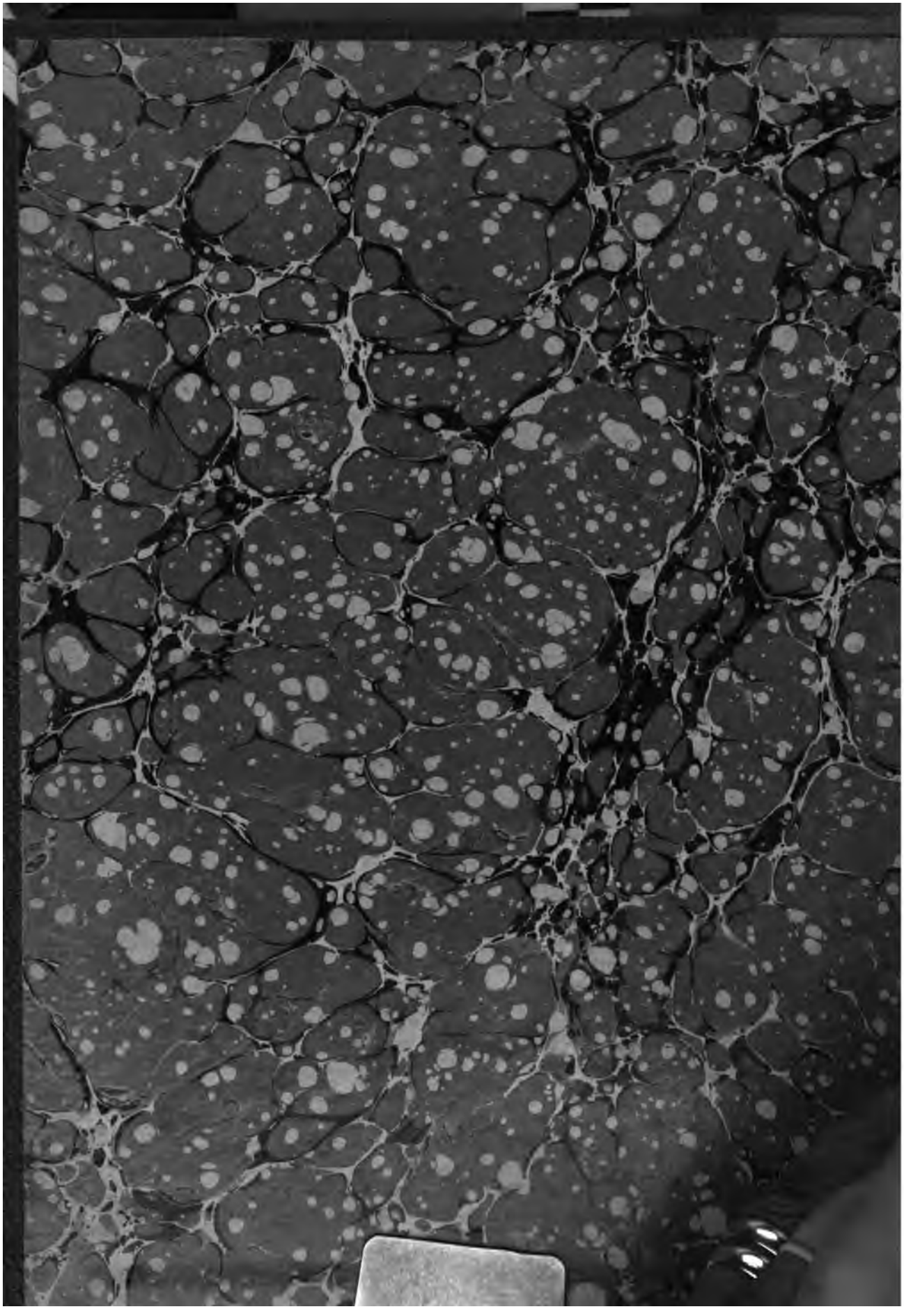

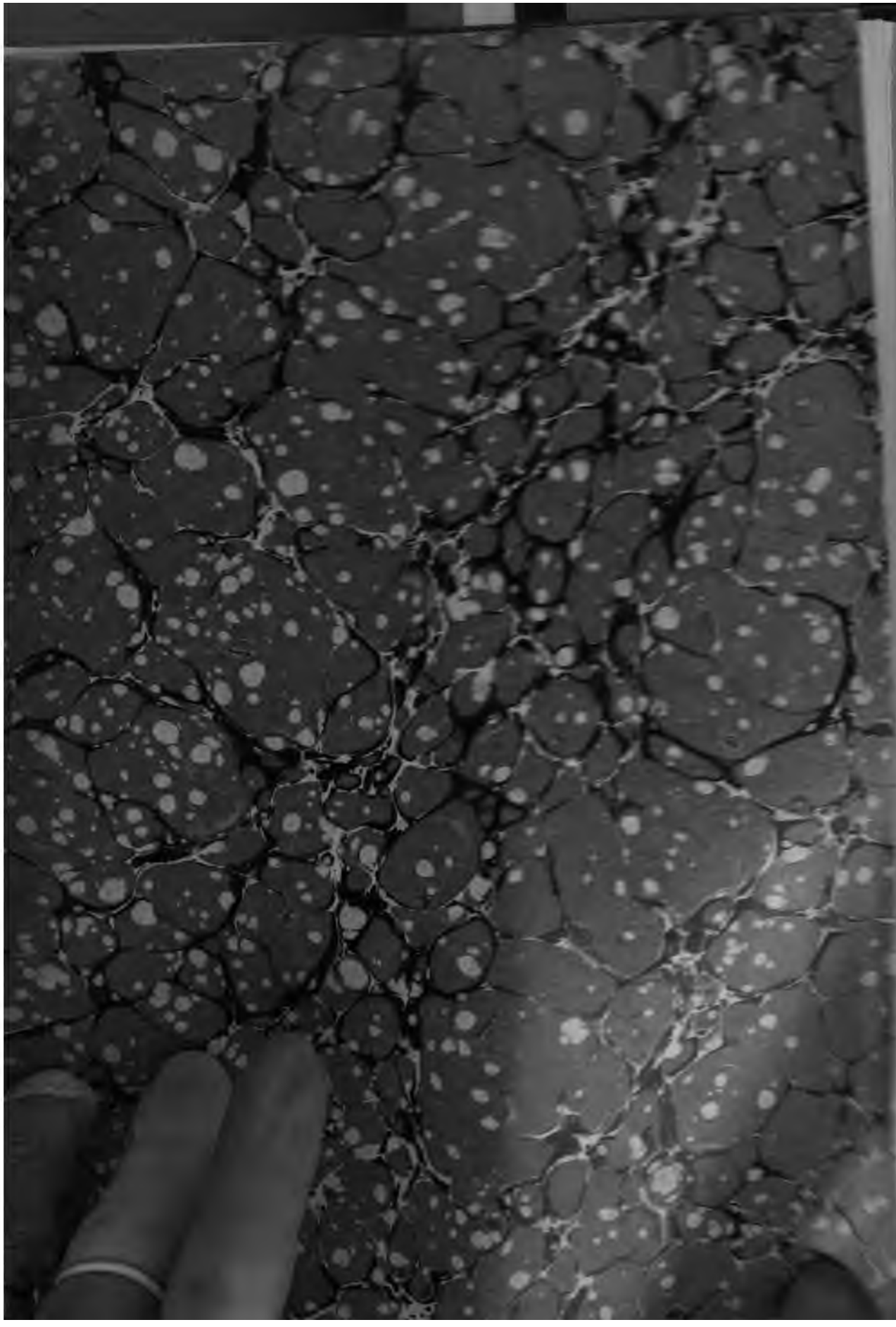

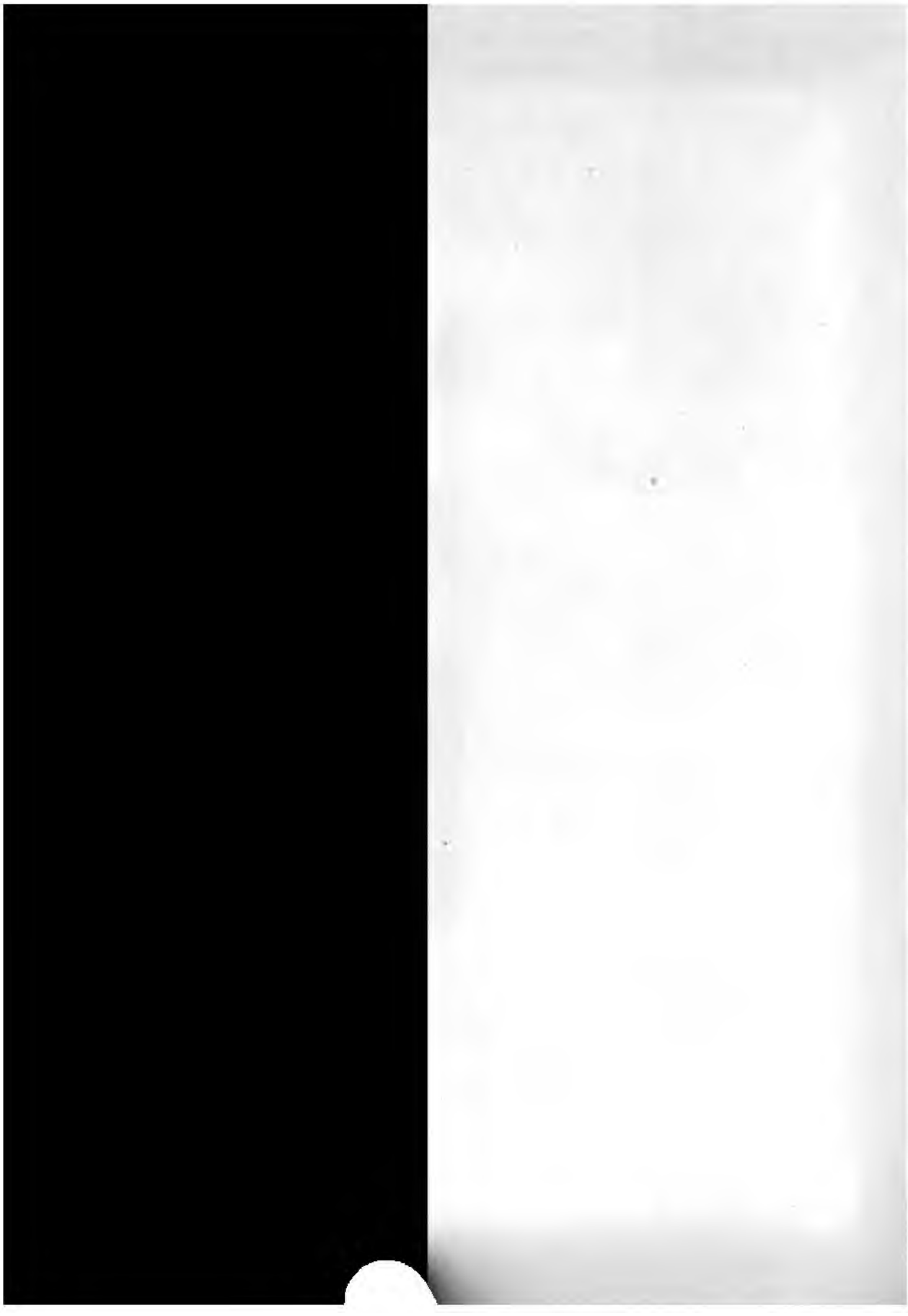

THE WORLD'S WORK

VOLUME II

MAY, 1901 to OCTOBER, 1901.

A HISTORY OF OUR TIME

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I

THE WORLD'S WORK

MAY 1901

VOLUME II NUMBER I

The March of Events

THE events of the month that stand out with striking interest were the brilliant feat of General Funston in capturing Aguinaldo, and Aguinaldo's good sense, after he had found out the real situation, in promptly taking the oath of allegiance to the United States. The military problem in the Philippine Islands is now practically solved.

In fact better conditions prevail in all the old Spanish islands than have before prevailed for an indefinite time. There is less violence in the Philippines than at any period within the memory of living men; there is no violence in Cuba, and on the first of April this year, for the first time within a century perhaps, there was not a case of yellow fever in Havana. In Porto Rico, in Cuba and in the Philippines, the fruits of orderliness and a stable government are already apparent, in the whole civil, educational and industrial machinery for building up the people and developing the land. The policy of the Administration (which was indeed rather a necessary plan of action than a deliberate policy), has been vindicated; and our more or less awkward attack on these problems, which were new to us, have been quite as successful as we could have dared to hope. Much remains to be done, but so far events have justified our action.

THE CHARACTER OF AGUINALDO

AFTER a long controversy, well-balanced opinion in the United States has come back to the first judgment made of Aguinaldo by our officers in the Philippines—that he is an ambitious and rather ignorant man with good qualities of leadership among an untrained people. His aim was a dictatorship, and he had no well-developed conception of a government other than a rude government by force. He is a high product of Tagalog civilization, tempered by Spanish influence. A wise leader in his position would not have attacked the United States Army; but his ambition was greater than his knowledge or his wisdom. The high qualities of a man who would liberate his country for the love of freedom were hardly his. His ambition was of a far more personal and primitive kind—to rule it himself for the gratification of his own power.

There is no essentially base quality in this estimate of him; for independence and free government, in the sense in which we know them, were inconceivable not only to a Tagalog leader, but to the Spaniards from whom he learned his lessons in government. It was indeed an admirable quality to prefer to be dictator over his own people rather than to surrender his supposed power to a government that he did not understand, and that he

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naturally mistook for another Spanish ruler; but to compare him with Washington is to attribute to him qualities that he could not have developed nor even understood.

It is probable, as Admiral Dewey remarked the other day, that if our officers had better understood the Filipinos when we first went to Manila, the war with them might possibly have been avoided—an opinion, however, which our military officers do not share. But the difficulty was twofold—our possible misunderstanding of the Filipinos, and Aguinaldo's clear misunderstanding of the United States. That he misunderstood the United States and our purpose was natural. The only judgment of Western civilization that he could make he was obliged to make from his knowledge of the Spaniards and their methods. And he was misled by those Americans who till the last encouraged him in the hope that we might depart from the archipelago.

His behavior when he was captured was dignified, and he showed great good sense when he recognized the situation that was revealed to him after his capture and took the oath of allegiance to the United States. By no other course could he henceforth be of any service to his people or to civilization.

A CLEAR WAY TO PEACE IN THE PHILIPPINES

FOR a month before Aguinaldo's capture, greater progress had been made than during any preceding period in the pacification of the islands and in the establishment of civil government. Organized hostility had practically ceased before this dramatic end came. Although 50,000 troops will for some time be required in the archipelago, their chief duty will be police-duty; and, but for the great area to be policed, a very much smaller number would be sufficient. Geronimo, one of the strongest insurgent leaders in Luzon, surrendered when he heard of Aguinaldo's capture, and there are few important organized bands now in revolt. The insurrection in Mindanao, the next largest island to Luzon, has been completely stamped out.

It has been announced that civil government will supersede military government on May 15. A code of municipal government has been framed by the Commission after a free discussion with the best class of Filipinos. Town governments will be organized with an elective president, a vice-president and a municipal council for a term of two years. The suffrage is restricted to males of twenty-three years of age who are owners of $250 worth of property, or payers of $15 in taxes, and who read and write either English or Spanish. Voters are required to take the oath of allegiance to the United States.

A general school system has been laid out for the archipelago, and a thousand trained American teachers are wanted, to whom salaries of from $75 to $100 a month will be paid. The Commission has appropriated $400,000 for school buildings, $220,000 for text-books and supplies this year, $25,000 for a normal school and $15,000 for a trade school at Manila.

It is doubtful if at any recent time there has been a nearer approach to peace in every part of the archipelago than now exists Of the local outbreaks and the activity of banditti during the Spanish rule we knew nothing. Certainly the systematic oppression by the Spanish officers was as depressing in its effects on the country as the military occupancy by the United States can be. There is good reason to hope that the inhabitants of the islands will very soon enjoy such stable conditions as they have never before known. Hostilities once ended, the progress in government and in the building up of the people and in the development of the country will be so rapid that a decade of American authority will bring better results than a cycle of Spanish rule. Henceforth the task seems likely to be a comparatively easy one.

The cheerfulness of this news of peace in the islands is made the greater because the whole energy of our government can now be turned to constructive work—the building up of the people for ultimate self-government; for this must be our aim.

A PIECE OF CONSTRUCTIVE STATESMANSHIP

SENATOR O. H. PLATT, of Connecticut, Chairman of the Senate Committee on Relations with Cuba, has written for this number of THE WORLD'S WORK an authoritative review of our relations and of our proposition to the people of the island. It is a temperate and convincing statement of the necessity and of the justice of our proposal; but it is much more than this, for it is an interpretation of our action by the author of the proposition that we have made.

This proposition is a piece of constructive work of the highest kind. The gravest prob-

lems growing out of our responsibility for the old Spanish colonies are settled by it at one stroke. The bugaboo of Imperialism is put out of sight; our pledge to ourselves and to the world to give the Cubans freedom is kept; a precedent is set for dealing with our other wards when the time is ripe, and the possibility of admitting any of them into the Union is scotched as firmly as it can be. Senator Platt's article is an explanation of this legislation by the author of it, and it is therefore an historical paper. It will be constantly referred to as the official interpretation of the purpose of our government, and it will become one of the fundamental documents of United States and Cuban history.

Evidence continues to accumulate that the Cubans will accept our proposal, and public opinion in both countries is fast adjusting itself to such a settlement. It is a settlement that will be honorable and advantageous to both parties. Cuba will begin its career of independence with advantages that no other part of America south of the United States has had, and we shall have established a principle for the settlement of our whole "colonial" problem.

This practical settlement of the relation of Cuba to the United States has yet attracted less notice in the world than it will attract when Cuba formally becomes independent. It will be one of the very few instances in history of a nation coming into existence by the philanthropy of another nation. Such a result will not only justify our war with Spain, but it will give lasting lustre to American honor. It is an event of which every American citizen must be proud.

THE HAWAIIAN TALK OF STATEHOOD

THE grave danger, and the only grave danger, that thoughtful men have felt might be involved in our expansion necessity (for it was a necessity rather than a deliberate policy), is the question which is sure to arise sooner or later of the admission of some of the islands into the Union.

The proposed settlement of our relations with Cuba disposes of this question as conclusively as it now can be disposed of. But the politicians of the Hawaiian Islands, which are under a Territorial Government, are already discussing possible statehood. Bills were recently introduced in both branches of the Territorial Legislature asking for admission to the Union. The debate on the subject in the Territorial Senate became so violent that the President ordered the sergeant-at-arms to remove one senator from the chamber. A well-timed motion to adjourn prevented a free fight. This first legislature has had several turbulent sessions.

There has thus far appeared no openly expressed wish by any section of American opinion for the ultimate admission of any of the islands, and no serious proposal is likely to be made at any early time. But it is in this direction, if in any direction, that ultimate danger to our political life may possibly appear.

THE RUSSIAN REVOLUTIONISTS AGAIN

RUSSIA is again the storm centre of the world. The revolutionists have another spasm of activity. An effort was made in March to assassinate the head of the Church; a student shot and killed the Minister of Public Instruction; and it was reported on April 1, that an officer of the Czar's household had shot at him, had missed him and had killed himself before he could be arrested; and the Czar was reported to be in a panic because of the many evidences of danger to his person. The open beginning of the present era of violence was a demonstration by students, for which many were thrust into the army for severe duty. The significant thing that followed was a procession of workingmen, which was a mild demonstration against the government. This is a somewhat novel feature of Russian agitation.

Another significant fact is that the Czar's Ministers practically reprimanded an executive officer who acted with severity against these demonstrations—an indication that the Ministry may feel the necessity of restraining executive severity. If this policy be carried far enough it may mean a rebuke to the Czar himself. But the meaning of most such events in Russia is likely to be misunderstood and misinterpeted abroad, so rigid is the censorship.

It is perfectly well known that the work of the Social-Democratic party, which is directed by leaders outside of Russia, has in recent years been unceasing; and it may be that a larger and better secret army of revolutionists has been trained than at any previous time. Their "underground" press is active, and their publications are freely circulated out—

side of Russia and no doubt extensively circulated there.

Hitherto the enemies of the Government, active as they have at times been, have been comparatively few—as few as they were desperate. But the organization of the Social-Democrats, who have succeeded the Nihilists, is larger and wider. A group of conspirators is a dangerous thing to a monarch; but, if the conspirators be few, the general system of government is not likely to be changed even by their utmost endeavor. But if the masses of the working population join the army of active discontent, whenever the army becomes large enough civil war may follow. There is probably not the slightest danger at any early time of civil war in Russia, but the new movement looks toward such a hope. The prime purpose of the old form of Nihilism was to remove the rulers by assassination, and the next step in the programme was uncertain. The prime purpose of the newer Social-Democracy is to establish a radically different form of government, and the removal of rulers is a mere incident to that end.

CAN RUSSIA BE LIBERALIZED?

THUS the old stubborn problem of the liberalization of Russia comes forward again. The profoundly interesting question is whether liberalization can come through violence or whether the revolutionists must content themselves with awaiting the slow pressure of world-forces—the pressure that is gradually turning all kings into figureheads.

The pathetic paradox is that the Czar is perhaps the most helpless man in the Empire to bring about a radical change. Encased as he is in a governmental and social system that is stubborn because of the rigidity of the privileged classes and of the ignorance of masses, he is comparatively helpless. No government has been liberalized except by the pressure of an awakened people; and there is yet no satisfying evidence of an awakened people in Russia. Your real Russian may doubt man, and he may doubt God, but he has never doubted the superiority of his own civilization and his own system over the more liberal systems of the western world. In his own orbit the Slav has not yet reached the angle of direct light. Whether the illumination of his long-entrenched aristocratic and religious thought can be hastened by sporadic revolutionary efforts—that is the question.

The present trouble will probably pass without affecting any radical change. Even if the Czar should be killed, nothing of far-reaching importance would be likely to happen. The social and military and governmental system would remain the same, and the old problem would present as stubborn an aspect as ever, because the masses of the people are not ready nor of the right temper for self-government.

THE RUSSIAN WORLD-GAME IN ASIA

WHILE this acute danger exists at home, perhaps because of this acute danger, Russia is playing the most stupendous game that is now in progress on the map of the world.

She has had practical control of the great Chinese province of Manchuria almost ever since the trouble in China began—as a "temporary" occupation to make sure of protection to Russian railways and other interests there, and the treaty, which was at first secret, whereby China was practically to yield Manchuria to Russia, was to be signed by March 26. But on that date China, under pressure from the other Powers, had declined to sign it. Japan and Great Britain, in particular, let it be known that the signing of such a treaty would be regarded by them as a breach of the allies' agreement if not as a signal for the ¡ 'ition of the Chinese Empire. On March 1st, the United States Government informed all the allies of the memorandum that it had sent to China on February 19, that it would be unwise and dangerous for China to execute any treaty with any single Power.

The impression prevails that the execution of the treaty giving Manchuria to Russia was not defeated, but only delayed by China's declination to sign it within the required period; that Russia will not relinquish her hold on Manchuria, and that sooner or later it will doubtless formally become Russian. The tension was made greater for a period by a temporary dispute between Russian and British forces at Tientsin about a railroad side-track—a dispute that for a time threatened open hostility. This friction was removed.

But the discussion of the sum to be demanded from China as indemnity may cause serious disagreement at any stage. The United States Government has expressed its willingness to the payment of the indem-

nity in small sums extending over a large period, but all the Powers do not approve this plan. Russia in Manchuria is a constant provocation to disagreement, whether a treaty with China be signed or not. The strongest military force in China is the German force, and Germany is not likely to be the most moderate in demanding indemnity. Japan is openly hostile to Russia. Great Britain is yet engaged in South Africa. Our own government wisely restricts its activity to moral suasion. The outlook therefore is not as hopeful for preserving the Chinese Empire as we could wish it were.

And it is Russia now as it was Russia in the beginning that causes the greatest fear, despite her friendly protestations. She has a settled policy of Asiatic conquest. Steady, sometimes stealthy and sometimes ostentatious, but always certain is her advance. In methods very different, but in results alike effective, she absorbs Persia on one side of the continent, and on the other side she acquires (for she will yet acquire) Manchuria. Internal disorder may threaten the throne, Czar may succeed Czar, and ministry succeed ministry, but there is a continuous purpose, perhaps an inevitable race movement, in the Russian push eastward. Sufficiently Asiatic instinctively to understand the art of conquering and assimilating Asiatic populations, the Russian has advantages that no purely European conqueror can hope for—whether his conquest be by arms, by diplomacy, by industry, or by trade. It looks as if he were destined to rule the greater part of Asia.

An illuminating chapter of this advance is told in this number of THE WORLD'S WORK by Mr. Mumford in his article about the Russian supercession of England in Persia. While the eyes of the world are fixed on Manchuria, or on Peking, or on St. Petersburg, the work of Russianizing Persia goes steadily forward. Not only may the Chinese Empire be partitioned, but the great conflict between the two dominant races of the world, the English and the Russian, may before many years take place on the borders of the long-slumbering cradle-land of civilization.

THE DANGER OF A JAPANESE-RUSSIAN WAR

BUT in the meantime Japan must be reckoned with. That wonderful little Power is not averse to a war whereby she might still further emphasize her influence in the East, and elevate her rank among the great Powers. Her hostility to Russia has slumbered since the unfair treatment that she received at the close of her conflict with China, but it has never been forgotten.

Now Russia is thought to have removed the English collector of revenue in Corea, and Japan interprets this as an unfriendly act, and Russian conduct in Manchuria has inflamed the Japanese Government. There has been an open threat of war, and Japan has been making active and extensive preparations. There is no doubt of the eagerness of the Japanese people for such a conflict. The patriotic feeling of the country is deeply hostile to Russia.

Of the allies that must come to an agreement about a settlement with China, England still has her war in South Africa, Russia has her acute troubles at home, and Russia and Japan are at swords points. Agreement on indemnities is not made easier by these complications, and the fate of China is uncertain for so many reasons that conjecture must descend to the level of blind guessing.

THE BOERS' STUBBORN OR STEADFAST REFUSAL

THE peace-terms offered to the Boers by the British were surprisingly liberal and in declining them the Boers seem surprisingly ill-advised. General Kitchener, with authority, offered, on the surrender of the Boer arms and ammunition and the cessation of hostilities, to give amnesty in the Transvaal and the Orange River colonies to all *bona fide* Boer soldiers, and to all belligerents in the Cape Colony and Natal except British subjects who had taken up arms against Great Britain; to return the military prisoners from St. Helena and Ceylon; to replace military law by a civil administration, looking toward the establishment of a representative government; to permit the use of both the Dutch and the English languages in the schools and in the courts; and to give $5,000,000 toward payment for the loss of the burghers' property actually caused by the war. General Botha reported that, after a conference, the Boer leaders had declined these terms. The only terms that Great Britain had before offered were unconditional surrender.

Weary as the English public is of the conflict there was at once a vigorous revival of war-feeling. One explanation of the Boer refusal is that the Boers hoped for better terms

because of the difficulty that was at the moment threatened between Great Britain and Russia in the Far East. The true reason for their declination is doubtless their unwillingness to desert their kinsmen in the Cape Colony who joined their desperate fortunes. But, whatever their reason, the continuance of the struggle seems clearly to put a heavy responsibility on the Boer leaders. The British will put to the severest strain, if need be, the whole resources of the Empire—even to the remodelling of their revenue system—to end the long struggle victoriously.

A ROYAL VISIT TO THE BRITISH COLONIES

THE Duke of Cornwall and York, the heir to the English throne, has gone on a world-girdling journey to the colonies, by the eastward route; and in due time, he will reach Canada. On May 6 there will be a celebration at Melbourne in honor of his visit and on the occasion of the opening of the Federal Parliament of Australia. Such a journey is an obviously excellent part of the education of a prince; but it is noteworthy that the English royal family appreciates its two-fold value more keenly than the monarchs of any other country. This journey was planned by the Queen, who was the most far-sighted monarch of our times. One of the wonders of this democratic era is the deep-seated loyalty to England of her great independent colonies —a wonder that a close study of the Queen's wide sympathy goes far to explain.

THE STATUS OF THE CANAL TREATY

THE Hay-Pauncefote treaty as amended by the Senate was returned by the British Government without its signature on March 11, and negotiations with regard to the cutting of an isthmian canal are now at a standstill. The original Hay-Pauncefote treaty, it will be recalled, received the assent of Great Britain; but the Senate amended it, and this amended treaty is not acceptable.

The objections that the British Government makes to it seem rather technical than substantial, namely (1) that the consent of both parties is necessary to abrogate the Clayton-Bulwer treaty (we asked that the new treaty should supersede the old one); (2) that the proposal of the United States to defend the canal is in violation of the purpose of the original agreement that its neutrality should be guaranteed by both governments; and (3) that in fact only Great Britain would be bound to observe neutrality, and that no other nation would be so bound.

Great Britain is, of course, clearly within her rights to withhold assent to the treaty, and her declination is expressed in friendly terms. But the situation is a complicated and embarrassing one.

The British Government forgot or ignored one important fact—that, whereas the Clayton-Bulwer treaty contemplated the construction of a canal by the help of both American and English capital, the proposal now is that it shall be constructed by the United States Government alone. Under these circumstances we surely have a stronger claim to control of it than we should have had if it had been built by both British and American capital.

The important facts are (1) that public opinion in the United States demands the construction of a canal by our Government; (2) that a strong section of public opinion, including a majority of the Senate Committee on Foreign Affairs, is in favor of independent action without further reference to Great Britain's wishes; and (3) that to reach an agreement with Great Britain further negotiations must be begun by us, Great Britain having made no proposition when it declined to assent to the amended treaty.

It would be difficult to conceive of a more complicated situation. But the friendly spirit in which the subject can be discussed by both governments gives hope of an amicable arrangement. In the meantime the "interests" that are opposed to a canal are said to be active to discourage it. But the public opinion that favors it is so strong that nothing less than a period of great financial depression could cause the enterprise long to be postponed.

The canal is an undertaking which would make any administration so memorable that the utmost endeavors of the President and of the Secretary of State will be made to begin its construction as soon as possible. The present hitch is unfortunate; but the United States is going to cut the canal and an amicable way will be found to do it.

There is one remark in Lord Lansdowne's instructions to the British Minister at Washington which hints of the seamy side of diplomacy—that Lord Salisbury

"did not see how her Majesty's Government

could sanction any convention for amending the Clayton-Bulwer treaty, as the opinion of this country would hardly support them in making a concession which would be wholly to the benefit of the United States, at a time when they appeared to be so little inclined to come to a satisfactory settlement in regard to the Alaskan frontier."

The sensible and broad view of the whole matter taken by the London *Spectator* commends itself:

"We cannot help thinking that, instead of contriving a very effective diplomatic score, the Marquis of Lansdowne would have been better employed in asking himself what were the essential interests of the United Kingdom in the whole question. We believe the British mercantile and maritime interests demand that a canal shall be made, that when made it shall be held by America as we hold the Suez Canal, and that, except for keeping British Honduras, which of course we shall keep, the less we have to do with Central America the better. So long as we keep command of the sea—and unless we keep it we shall cease to count as a nation—we need not get into a panic over Americans fortifying the canal. Sea power will control the canal, not land batteries."

THE RISE OF NEW MUNICIPAL ISSUES.

THERE is no doubt about a rising tide in municipal government. Public opinion is becoming alert about it in most significant ways; and the two subjects that it concerns itself most about are municipal home-rule and the careful guarding of franchises. The April elections in Chicago, Cleveland and St. Louis, and the present activity in New York have very instructive lessons on both these topics.

There is a very strong popular opinion, which is growing in every part of the Union and which is especially vigorous in the middle West, in favor of a much closer scrutiny of franchises than ever asserted itself until a very recent period; and the sentiment is becoming strong even in favor of municipal ownership. Municipal ownership will play a greater and more earnest part in municipal politics for a long time to come.

It has received a noteworthy impulse by the election of Mr. Tom L. Johnson as mayor of Cleveland. His platform was "a three cent street railway fare and universal transfers;" and he was elected chiefly because he stands against the renewal of street railway franchises under the present terms. In Chicago, too, although the question was somewhat more complicated, Mayor Carter Harrison owes his third election to his loyalty to the public interests as against the "traction interests." His platform demanded that "pending the achievement of municipal ownership" no franchise for street railways shall extend more than twenty years; that fares shall be reduced during the crowded hours; and that the municipality shall ultimately acquire the street railways. In spite of the grave criticism of his administration for other reasons and in spite of the Altgeld opposition in his own party, Mr. Harrison was elected on this street-railway platform. In Toledo, Ohio, Mayor Jones was reëlected on a platform of a similar and even more radical character in other respects.

In St. Louis, Mr. Wells (Gold-Democrat) was elected chiefly because he stood for municipal home-rule. Here the candidate who stood for municipal ownership was defeated; for the dominant impulse of the people was to make sure of a business-like and creditable administration during the period of the approaching great fair, commemorative of the Louisiana Purchase.

In New York, Governor Odell has made a successful revolt against the Republican machine of Senator Platt. Senator Platt proposed legislation that would do gross violence to home-rule in New York city in its police management. The conduct of municipal affairs by state machines is receiving many discouragements.

The significance of the spring municipal elections from the point-of-view of national politics is not great; for local issues were dominant. But in Cleveland, Chicago and St. Louis the newly elected mayors are Democrats; and in St. Louis and Chicago the successful Democratic candidates were opposed by the Bryan faction of the party; and Mr. Johnson, of Cleveland, is a Gold-Democrat. If these elections have any national political significance they indicate the good management and strength of sound-money Democrats. Mr. Johnson is, for the moment at least, spoken of for higher honors. He is a man of fortune which he made chiefly from street railways, a man of convictions and courage, a free-trader, a believer in the single-tax, a man of good business ability and a former member of Congress.

But the political and personal aspects of these elections are of small importance beside their importance as indications of the growing

opinion in favor of home-rule for cities, in favor of stricter care for the public welfare in disposing of franchises, and of a strong tendency toward the municipal ownership of street railways.

THE BUSINESS METHOD OF PURIFYING CITY GOVERNMENT

THE Committee of Fifteen citizens of New York city, who without making much noise are trying to cut the connection between vice and the government of the city, are the most effective enemies that the Tammany machine has encountered for many a year. Their primary purpose is not to suppress vice, which they frankly recognize is an impossible task in a great city; but it is to prevent the city government from protecting vice and drawing its revenue from it. They are every week closing gambling houses and other such resorts, and are thus cutting off one of the great sources of Tammany's revenue—a source that yields in good times an incalculable but enormous sum. The same process chills the loyalty of the criminal classes: if Tammany cannot guarantee protection to them, why should they be loyal to Tammany?

The value of the lesson taught by this method is the greater efficiency of business men than of religious crusaders, for the very practical work of lifting a city government to a decent level.

A SUCCESSFUL SECRET PRIMARY LAW

THE nominating convention is the stronghold of the boss, and a primary election that should be held under the secret ballot-law would at least arm a community against its bosses. An interesting and apparently conclusive experiment of this kind has been tried in Hennepin county, Minnesota, which includes the city of Minneapolis.

The aim of the Day primary election-law is to substitute a secret nomination election for the nominating convention. The nominating primary is held seven weeks before the election to allow time for a campaign. The primary election-day is also one of the registration days, so that a voter when he registers for the general election can cast a secret ballot for the nomination of candidates that he prefers.

Under the Day law any properly qualified person may become a candidate for office if he can produce a petition signed by a specified number of voters. In this way the political field is open to any one who has friends enough or followers enough to nominate him by their ballots. But the law relieves a candidate and his friends of the pressure of party affiliations, and it gives independents an opportunity to make their power felt. The Australian ballot offers increased immunity to voters from coercion and corrupt influences and encourages coöperation among good citizens by giving them primaries exempt from the dictation of the machine.

The objections made to the Day law before it was tried were that it would lead to confusion, cause delays, and disrupt legitimate party organizations. But when it was tested last fall there was no confusion, no delay, and no disruption—except that five Aldermen of bad reputation were not even nominated, and the Hennepin Republican Association, which is a Tammany-like machine, was shaken to its foundations. It brought five times as many voters to the primaries as had ever attended them before, and it demonstrated anew that pure primaries are the most effective instruments in the hands of honest men to combat the machine. In the Hennepin county primaries the best list of candidates was put forward that had been nominated in many years, and many of them were elected. The legislature of Minnesota has now extended the law to the whole state, with some unfortunate amendments.

A stubborn contest has been carried on in the Wisconsin legislature for a similar law. Governor La Follette has stood resolutely for it; and when this summary closes, it had been passed by one branch of the legislature against the desperate opposition of the political machines.

It is bound to be an important instrument in undoing municipal bosses; and, if we may dream for a moment of the millennium, think what a change such a law would bring if it could be substituted for a national convention! These quadrennial mobs are the least representative bodies that exist outside the Russias.

THE WESTERN DEMAND FOR IRRIGATION

MOST of such sectional feeling between the Eastern and the Western States as has shown itself in times of economic depression has disappeared—at least it slumbers; for the West now lends money to the East. But interesting reminders of the two different points of view come to the surface now and

then. An Omaha letter to the Boston *Herald* —Omaha and Boston are the extremes of temperament, if we longer have extremes—recently told of the sectional struggle that may be expected if Congress continue to refuse aid to irrigation in the arid States. It was an arid Senator who talked the River and Harbor bill to death.

No one who knows the temper of the West can doubt that irrigation works will yet be built by the Government. Although promoters of this movement secured no legislation during the last Congress they carried on a campaign of education; and they expect the next Congress to pass the Newlands bill. They have all agreed on this measure, and the National Irrigation Association will champion it.

The Newlands bill does not call for any direct appropriation of money from the treasury; but provides for the use of the money hereafter secured by the sale of public land in the arid and semi-arid States to construct irrigation works. This sum last year was about $3,000,000. The Government is to use for irrigation the future revenue from this source —so this bill provides; the irrigated land is to sold to settlers at a fixed price, and the Government is thus to be repaid.

The objection to the bill rests on the general rule that the Government never receives back money once appropriated in such fashion. But, since the public lands that will yield this revenue lie only in the States to be irrigated, the general objection is likely to yield to the earnest organized public opinion of the West. The Western earnestness about the matter is little understood by local public opinion in the Eastern States.

THE MOST INTERESTING JOURNEY IN THE WORLD

PRESIDENT McKINLEY is about to go on a journey to the Pacific States, and after his return he will attend the Commencements at Harvard and Wesleyan Universities, and visit other places in New England.

He does well to take these journeys, for he will enjoy them and profit by them, and so will the people. His jaunt is a cheerful enterprise from every point of view. It can have no personal political significance. He can go without arousing the suspicion even of those emotional children of the Republic who dream of him in imperial robes. He will see the people as they are, the people of all parties and of all sections of the country, and he will see them in the cheerful mood of prosperous times. He is personally well-liked. He has a more sincere respect of his political opponents than any recent Executive. He has, for instance, resolutely and wisely refrained from giving sectional offense to the Southern Democrats. From Washington to New Orleans and to El Paso he will be as heartily welcomed as he would be in Ohio. Everywhere he will be received with pride and honor.

Across the desert he will see the meaning of the cry for irrigation. In California he will find out public opinion about the Isthmian Canal. Up the coast he will find evidence of the wonderful prosperity of the great northwest, for the old frontier-phrase has now moved across the mountains to Puget Sound, and he will see a trans-Pacific service better equipped than the trans-Atlantic service was until the other day. He will see a regular yield of precious metal from Alaska and from the Rocky Mountains that would have caused an economic spasm. He will visit the national parks that attract visitors from all parts of the world. He will return down the great lakes, which have a larger traffic than any other sea; and he will come to Buffalo, where the Pan-American Fair will show what advancement we have made since the great Fair at Chicago.

There is no itinerary from which a student of the practical forces of modern life could learn so much; no other country through which its ruler could get such a vista of the future of the world; no other journey so instructive to a man who looks to the well-being of mankind as the chief aim of civilization, and perhaps no man is so sure to catch the meaning of every phase of our bounding rise of life as Mr. McKinley.

And he has the habit of frank speech when he meets the people. His utterances will reveal more of his thought than he would express in many state papers. He goes at a happy time, too. The harassing problems of our island wards are nearer solution than ever before. The people are not wrangling about party doctrines. They have a more active pride in American citizenship than any recent generation has had, for they feel, as no preceding generation felt, the power and the destiny of the nation. The presence of the

Executive in a hundred towns and cities, at a time of partisan quiet, will bring home to the people the strength and the glory of the Republic—a strength and glory that are more than imperial, for they touch and lift the manhood of all our active millions.

Fresh from his western journey the President will be in a happy mood to receive the honors that our most important academic community will pay him, and he will return invigorated and mellowed by the most instructive experience that man could get from two months' travel. If every citizen of the United States could take this same journey, there would be none left to despair of republican institutions. The Old World dyspepsia of pessimism is always lost in Texas or in California or in Oregon or in the Yellowstone Park or on the Great Lakes, where there is health for all the ills of the sedentary mind.

STILL AN ASYLUM FOR DEFEATED POLITICIANS

IF President McKinley rises to some occasions he stoops to others. His appointments to responsible positions in our island-government, for instance, have been admirable. But his appointment of Mr. Rodenberg, of Illinois, a member of the last Congress who is now out of a job, as one of the National Civil Service Commissioners is a discreditable performance. Mr. Rodenberg while in Congress voted to "starve out" the Commission. To administer a law by the hand of its enemy is not even a decent treatment of the law. Peculiarly unfortunate was this appointment because it is an act of contempt to the purity of the classified service. It strikes at the very root of the merit system.

TWO INTERESTING INCIDENTS REVIEWED

THE rush of events does not abate the popular interest in the historical study of our recent history. Mr. Cleveland took occasion in a lecture at Princeton University late in March to review the "Venezuela incident" of his last administration. Mr. Olney, it will be recalled, was Secretary of State, and the vigorous, almost threatening, tone of our Government toward the Government of Great Britain regarding the boundary dispute with Venezuela, caused a shock to the ultra-conservative. Looking back to it, after these years of reflection, Mr. Cleveland earnestly said:

"I hope there are but few of our fellow-citizens who, in their retrospects, do not now acknowledge the good that has come to our nation through this episode in our history. It has established the Monroe Doctrine on lasting foundations before the eyes of the world; it has given us a better place in the respect and consideration of the people of all nations, and especially of Great Britain; it has again confirmed our confidence in the overwhelming prevalence among our citizens of disinterested devotion to American honor."

Another historical review of a disputed matter—this by a group of disinterested instigators—touches the beginning of hostilities in the Philippines on February 4, 1899. The Philippine Information Society of Boston has published a pamphlet setting forth all the evidence bearing on the beginning of the war. The conclusion reached by the editors is that the attack was made on our soldiers by the Filipinos on territory admitted by the Filipino leaders to be in the jurisdiction of the United States. The attack was probably not ordered on that particular day (or night) but there is proof that it was contemplated by the leaders at an early time, the editors of the pamphlet declare. There is no evidence that our forces instigated the attack to secure votes to ratify the treaty of peace which was then pending in the Senate.

The public opinion of the country had long ago accepted these conclusions both about the Venezuelan episode and the Filipino war.

THE UPWARD MOVEMENT OF FARM LABORERS

THE new census figures of farm tenantry indicate several interesting tendencies. The total number of farms has increased in the decade from 4,500,000 to 5,700,000, or twenty-six and two-thirds per cent. The increase in the number of farms, therefore has more than kept pace with the increase of population; and the great farm is not swallowing up the small one. The number of farms worked by their owners is 500,000 more than it was ten years ago.

Yet the number of farms worked by tenants has increased still more rapidly. Tenant-farms increased more than forty per cent. during the decade, whereas the number of those worked by their owners increased less than eighteen per cent.; and both have increased faster than the farming population. But an analysis of the statistics shows that the increase in the number of tenant-farmers

does not prove the degradation of the farm laborer. It proves rather his rise in fortune. The greatest increase in tenant farms has been in the Eastern and Middle Western States where the owners have been able to move to towns and villages; and the men who formerly where farm-laborers are now becoming tenants. Thus there is a movement upward of every class toward the class above it—a movement that shows, not a fixity of classes but a general economic improvement.

MR. CARNEGIE'S FAR-REACHING PLAN

MR. ANDREW CARNEGIE has already outdone all preceding philanthropists, and his giving is yet, he says, only fairly begun. On the day after he sailed from New York in March it was announced that he had given $4,000,000 as a pension fund for men who have served in his mills, an additional $1,000,000 to Carnegie Institute at Pittsburg, $1,000,000 for a library in St. Louis, and $5,200,000 to erect sixty-five free branch library buildings in connection with the New York Public Library, on the condition that the city provide sites for them and maintain them. These great gifts bring the total of Mr. Carnegie's public benefactions to more than $25,000,000, and they have nearly all been made on condition that they be supplemented by the communities which have received them. The sum of money, therefore, that he has spent and caused to be spent, in public education in its broadest sense and chiefly for libraries and technical schools, must be nearly or quite $50,000,000.

The results of these gifts will become greater as time goes on, and they will become so great that it is difficult now to measure them. The free library is just beginning to play its great part in the life of the American community, and the part that it can play in public education is just being discovered. It does a very much greater and more direct service than it did even ten years ago. A free circulating library is not only a place where anybody may consult a book, but it is an institution that will deliver a book almost at everybody's home. It has become one of the principal tools of the teacher; it is a guide to current discussions, not less than to classic literature; and it is a practical help to the artisan in his craft. The full measure of its utility has yet been by no means developed.

The free circulating library is a modern, democratic, peculiarly American institution. It is as different from the library that is a reference-house for scholars as the House of Lords is different from a town meeting, with a difference that is even more significant. The very word "library" has come to have a new meaning in the United States. For centuries it has meant an institution for the collection and for the preservation of books for the use of the learned. Of libraries, in this sense, we have nothing to compare with the great libraries of Europe.

But while the great collections of the Old World are of priceless value—are worth all the other treasures of the Old World—the library as it is developed in the United States is a wholly different thing. It is an aid to popular education, hardly secondary in its complete development to the public school itself. From this point of view it is not by its size nor by its value as a repository of rare editions that it serves the world, but by the extent to which it permeates the whole community, by the ease with which its books find their way to every home. It is with libraries of this kind that Mr. Carnegie is dotting the map, and the development of this kind of a library is so recent that the far-reaching wisdom of his benefactions is not yet apparent.

He has already given free-library buildings to towns and cities in thirty-two states, in three territories and in the District of Columbia, besides his similar gifts in Canada and the United Kingdom. Of our population of 72,000,000, about 10,000,000 may enjoy library facilities from benefactions that he has already made—or nearly one person in seven.

DEMOCRACY AS A SOLVENT OF GREAT FORTUNES

THE value of Mr. Carnegie's public benefactions is hardly greater than the value of his example. He follows and outstrips a long line of American men of great fortune who have given their riches for the public good, each in his own way—Peabody, Cooper, Slater—the list would fill half the pages of this magazine. A rich man in England, as Mr. Frederic Harrison said the other day, is ennobled, and then he must buy a great country-seat and found a family. In the United States he may both buy a country-seat and found a family, but he is seldom ennobled in American opinion unless he use his wealth for the public good.

It is easy to breed alarm in the mind when we think of the irresponsible waste of wealth in every great city almost within earshot of starving women and children; and when we see the huge brute strength of money in some of its unsocial uses, it is easy to feel a fear for our political institutions and for our theory of simple living. It is easy, too, to feel at least a distant fear of peril to our civilization when we see the increasing concentration of financial power. But, when the richest man in the world, who is also one of the most democratic men in the world, retires from active life to "make his soul" and cheerfully proceeds to give away his fortune while he lives—this is an offset to theoretical fears strong enough to refashion even a pessimistic philosophy. Mr. Carnegie's example is making the accumulation of great wealth for one's own spending or for one's own children almost a contemptible thing. A man that is rich unto himself is an unsocial man, and he is so regarded. In spite of the waste and the abuse of riches and the demoralization caused by display, the general principle seems yet to hold good that a democracy is a solvent of great fortunes.

But there is an amusing aspect also of the general discussion of the uses of wealth that Mr. Carnegie is provoking. How many men there are who could more wisely give away a fortune than by building libraries and technical schools, and how many seriously inform Mr. Carnegie of their ability to do better than he can do with his own fortune! A less philosophical and less merry man than Mr. Carnegie might well be discouraged by so much impertinent advice. But he is as resolute and as good-humored as he is rich (three qualities that have much to do with each other), and he smiles and gives—as *he* pleases. The joy that he gets from his benefactions is not the least noteworthy evidence of his healthful character.

That there is a class of persons who make it their business to advise rich men how to spend their fortunes is itself an evidence of the generosity of the rich. But if you feel that you are "called" to "manage" a millionaire, it is well first to remember that he is a stronger personality than you are, else he would not be the millionaire and you would not be the adviser; in the second place, that he knows that he is a stronger personality than you are, for you have made a measure of yourself by your impertinence. The best way to "manage" him is to let him once get a taste of the joy of giving and then to leave him alone. An old gentlemen, to whom a fortune came late in life a few years ago, gave $100,000 to an institution whose work pleased him. "I have got so much more pleasure," he said, a year later, "from the $100,000 that I gave away than from all I have left, that I am going to give the rest of it."

Any man who will take the trouble to ascertain the enormous sum that is every year given for public purposes by the rich men in the United States, and who will compare this sum with the public benefactions of any preceding time and of any other country, will have brought home to him a result of democracy that is one of the most remarkable facts in all human history

A SHORT STUDY OF RICHES

A STUDY of individual wealth, as the number of colossal fortunes increases, yields many curious and interesting conclusions, according to the student's temperament and the range of his wisdom.

The most discouraging fact that he meets is the power of misused money in politics. Here is a problem for the very stoutest practical reformer.

Another hard task is to devise any method whereby the rich may directly help the poor without undermining character and self-reliance. All helpful philanthropy is attacking this problem, and we are learning wisdom by experience. But to help the helpless is not the easy undertaking that it was for ages thought to be. Preventive philanthropy is the only ultimate or scientific form of help.

Another interesting fact that one encounters is that strong men care less and less for wealth. Most strong men of this generation in our country have accumulated enough wealth no longer to be impressed by it, and they do not think enough about either its power or its dangers. It becomes a mere counter in the game that they play for power or for sport, and oftenest of all from sheer habit. Having once begun the game they suffer ennui if they stop. It is here that our highest educational problem is—to train strong men to "cultivate their souls" without losing their vigor. Benevolence is a common quality, but a true culture is rare among the strong men of the United States.

And the truly cultivated man, the strong man who has both benevolence and the higher resources of mind and character—such a man soon discovers that it is no longer necessary to be rich. The city is his landscape gardener, his librarian, the keeper of his gallery of paintings, the provider of his museum—nearly all the things that rich men once spent fortunes for are his without cost. To such a man the accumulation of great wealth for his personal enjoyment is a sheer waste of energy.

A right and well-balanced philosophy will emerge in due time from our boundless activity, and we shall see a sound culture give balance to our stronger personalities as it now sweetens chiefly those that are less strong.

THE DECLINE OF THE RELIGIOUS PRESS.

COMMENT has been provoked about the decline in influence and in circulation of the religious press in the United States during the last decade or two—a decline that has shown itself in two ways. Such of the journals of the several Protestant sects as have not suffered a positive falling off have failed to grow in proportion to the growth of population, and several important journals that were once distinctly religious have become secular. Most of them indeed have become more secular than they once were. The change is an interesting one, but it is not a change that shows any important facts except the liberalization of religious thought and a great advance in the development of periodical literature in general. The secular journals now report and interpret more religious news than the church papers did in the time of their greatest influence. On the other hand, there is a strong and necessary tendency in the conduct of the church papers to make and to keep them organs of their particular sects. This is a necessary and useful service, but the general liberalization of thought has made it impossible for a journal that is the organ of anything, religious or secular, to exert a strong or general influence. The decline of strictly religious journalism, as far as it has declined, measures the advance of reverent secular journalism in its treatment of religious subjects.

Such decline as has taken place may easily be exaggerated, and easily misinterpreted. There has been a falling away of popular interest in ecclesiastical doctrines, but there surely was never a time in our history when the literature of good conduct was either so excellent or so widely diffused. The broad abyss between the Christian church and "the world" is being bridged, and increased strength and efficiency to both is the result. Meanwhile the stronger religious papers emancipate themselves from sectarianism and attain a general interest, while the weaker decline into the news-papers of church organizations, reporting conventions, dedications, and the like.

THE SPANISH LOSS OF TRADE BY THE WAR

THE loss of her colonies has greatly reduced the trade of Spain. Spanish exports to Cuba have fallen from $136,000,000 to $66,000,000 a year; to Porto Rico from $44,000,000 to $13,000,000; to the Philippines from $49,000,000 to $27,000,000. The results are almost disastrous to Spanish industry. There is an annual loss of trade representing a sum larger than the whole direct cost of the war, including the value of the fleet.

This trade, after the Spanish fashion, was, in a large degree, forced. The colonies were not permitted to trade where they pleased. A good share of it was, therefore, in the nature of a tax on the colonies—wherein there is a lesson for us.

THE PAN-AMERICAN EXPOSITION

THE Exposition that will be opened at Buffalo on May 1 will be the most worthy object-lesson in American progress since the World's Fair at Chicago, and especial attention will of course be paid to an adequate representation of the opportunities afforded by the Central and South American States as markets for our wares.

The very rapid extension of American commerce and the corresponding growth of manufactures give a chance for an exposition that will be of very great educational value—a chance that the management of the Fair have from the beginning understood and intelligently worked for.

Such a showing of American progress falls directly in line with the work of this magazine. The magazine, therefore, will naturally give one number to an accurate description and interpretation of the Fair. The illustrations will be from photographs taken during the first month of the Exposition, exclusively for use in THE WORLD'S WORK. The aim will be to make it, both in its artistic and in its interpretative work, worthy of the subject.

THE MAKING OF PLAYS FROM NOVELS

AT one time last winter six plays made from popular novels were on the stage in New York, and the theatrical managers had contracts for four times as many more. Since "Trilby" and "The Prisoner of Zenda" were profitably dramatized, most popular novels have been staged, many with pecuniary success, but very few with artistic success.

The making of plays out of books has become a profitable industry; for it is an industry rather than an art. A shrewd old man who has read all the best novels and seen all the best plays for fifty years asked the other day, when somebody spoke to him in praise of a new story, "Is it to be put on the stage?"

"Yes."

"Well, then, it's a poor novel. I'll read Thackeray again, I thank you."

"Yes, but didn't you know that Becky Sharp had a long run on the stage?"

"Well — but — things change when things change, don't they?"

But there is a radical difference between the art of the novelist and the art of the playwright. A few stories lend themselves to successful treatment by both arts; but such stories are not likely to make either the best novels or the best plays. The explanation of the fashion of making plays from books is not the artistic fitness of the material, but the commercial shrewdness of managers. To the purely financial mind a play consists of two things — the play itself and the publicity that can be given to it. Any popular novel has one of these elements. A versatile playwright can be found who will make the other, more or less badly.

So strong has the fashion become that one manager who wished to procure a play first had the play-carpenter write the story as a novel. It is the worst novel, as a piece of literature, that ever was patched together; but the theatrical manager by theatrical methods contrived to sell it. Thus he has secured his advertisement. The play will now come forward. Of course both book and play will last only a season. We shall all be mildly amused, and the manager and the author will profit by the slumber of our judgment. They prey on our easy-going good nature.

Meantime the profit of the industry has sharpened the commercial wits of the novelists. The old-fashioned publisher's contract with an author stipulated that "any compensation received from dramatization shall be equally divided between the author and the publisher." Such a contract was in fashion in those simple days when novels were never dramatized and before novelists became shrewder bargainers than publishers. "Why," a novelist lately asked his publisher, "should you have a share in the dramatic rights of my story — why more than in my income from lectures or from my practice of the law?"

Since by far the larger part of life is industry and not art, the making of novels from which plays may be made and the making of plays from successful novels will go on as legitimate trades, till another fashion come. But neither art will get the highest satisfaction from the combination; and neither the best novelists nor the best playwrights take more than a pecuniary interest in it.

Consider the difference between this fashion of ours — the sheer manufacture of plays out of popular tales — and the fashion whereby the stage in Paris, in Berlin, and in Copenhagen is supplied with plays, where Rostand, Sudermann and Hauptmann and Ibsen are at work. The comparison is not comforting nor hopeful. But if we have not yet got far enough away from the "amusement" conception of the stage to couple it closely in our thought with art, it is fair to remember that the plays manufactured out of novels are, as a rule, a great improvement over the plays that used to be adapted from the French. We are getting in the habit of using home material. We shall soon learn that the proper way to use home material on the stage is not to take it out of successful novels, but to take it directly from life. We are simply repeating the English experience of a former time. There was once an effort to put many of Dickens's stories on the stage, most of which failed, and of all men that ever wrote for a charmed world, Dickens himself knew least about stagecraft. In this respect he was like practically all other good story-tellers. The proper methods of work are for the novelist to stick to his novels, and the playwright to his plays, each getting his material wherever he can get it best, without reference to the other.

GENERAL BENJAMIN HARRISON

GEN. BENJAMIN HARRISON was a man of most sturdy and admirable qualities, an old-fashioned kind of man whose mental attitude to many problems of our time was the attitude of a generation ago. In politics he was extremely partisan with the partisanship of the war period, but there was no more patriotic man in the Republic than he. In his religious life he held to the straight sect of Presbyterianism, and he believed in the value of rigid discipline after the fashion of an earlier generation. For instance, on his journey through the West while he was President he stopped in Denver on Sunday. The citizens of Denver wished to invite him to make an address, but they hardly dared suggest that he speak on the Sabbath. But they did ask him and he consented. The address was a sermon on the sacredness of the Lord's Day.

He had a certain hardness of mind accompanied with great clearness, a high sense of justness coupled with an unsympathetic manner. He had the power of convincing men, but he seldom moved them; everybody greatly respected him, but the respect was not accompanied with personal affection.

Of a distinguished ancestry, he made his own way and stood on his own merits, and his strength of character and mind was such that he fairly won the great honors that came to him. His great-grandfather was a signer of the Declaration of Independence, his grandfather was President of the United States, and his father was an Ohio Judge. He was born at North Bend, Ohio, on August 20, 1833, and he spent two years at Miami University in Ohio. When he came of age he married and went to Indianapolis where he made his home till his death. His diligent application to his profession, and his careful study of public questions brought him a good equipment both for professional and political success. He was elected Reporter of the Supreme Court of Indiana in 1860 and reëlected in 1864 while he was in the army. In 1862 he volunteered and went to the war as a second-lieutenant, and he made a most creditable military record. He rose to the rank of Brigadier-General of Volunteers.

When his second term as Reporter of the Supreme Court expired, he resumed his law practice in Indianapolis, and took part in most of the important cases in his state during the next twenty-five years. In 1876 he made a canvass of Indiana for the office of governor, under conditions that were hopeless and that brought his defeat. He was offered a place in Garfield's cabinet in 1880. But he declined it, preferring a seat in the United States Senate, where he served one term. The Democrats by a gerrymander of the State carried the Legislature in 1886 and thus defeated his reëlection. But his friends, feeling that he had been ill treated, made the more energetic effort to secure for him the nomination for the Presidency in 1888. The friends of Mr. Blaine in that convention gave Harrison their support at last, and he was nominated. In that campaign Mr. Cleveland had staked his whole chance of reëlection on his famous radical tariff-reform message, and General Harrison was elected. He owed the Presidential nomination in great measure, and his election, as many Presidential candidates have, to his residence in a doubtful state; in great measure, too, to his staunch partisanship.

His Administration was a creditable one and a clean one. But there were no great events that make it stand out conspicuously. The McKinley tariff-act, the so-called Sherman Silver-purchase act and a vigorous effort made by the Administration to pass the Force bill indicate the direction of his thought and activity and the vigor of his partisanship.

Both he and Mr. Cleveland were renominated in 1892. Neither man had a genius for political leadership, and their failure to inspire enthusiasm made them better candidates when they were out of office than when they were in. The administration of each gave the opposing party the advantage. Mr. Cleveland, therefore, won; and General Harrison retired from public life.

He took up his law-practice again and was very successful. He was retained as counsel for Venezuela in its boundary dispute with Great Britian. After the Peace Conference at the Hague he was appointed Arbitrator for the United States.

General Harrison maintained the dignity of an Ex-President's difficult position with both grace and increasing usefulness. He gave much time to the great religous body of which he was the most distinguished layman. He presided at the World's Ecumenical Congress in New York, and he was a member of the Presbyterian Committee to consider the revision of the creed. He gave much time, too, to educational institutions in which he was interested; and he kept alive his interest in public affairs. The passing of the period of his participation in politics softened his partisanship. He married a second time after his retirement from the Presidency and he seemed likely to grow old both gracefully and usefully when his death occurred suddenly on March 13 from pneumonia. He continued to develop at a time of life when most men begin to show some signs of decay. Mr. Cleveland is again, as he was once before, the only living ex-President.

BRIGADIER-GENERAL FUNSTON

GENERAL FUNSTON'S capture of Aguinaldo, carefully thought out, well-planned with an admirable judgment of men, successfully executed without loss, requiring deliberation, coolness, endurance and daring, was characteristic of the resourcefulness and energy of the man. He is the most picturesque soldier, and along with General Bell, the most dashing that the war has developed. The many kinds of danger that this expedition involved, especially the danger of treachery, make it stand out as a most extraordinary exploit; and it is no doubt the last brilliant military achievement of the war in the Philippines, for it has the great and welcome merit of ending hostilities. The story of the capture is worth telling.

Aguinaldo had long been in hiding in the Province of Isabella, in the northeastern part of the Island of Luzon. In January he sent a messenger with letters to Baldemero Aguinaldo in Central Luzon, ordering men to be despatched to him as soon as possible. General Funston secured these letters which, of course, conveyed the information where the leader was. He had already secured the seal of Lacuna, one of Aguinaldo's generals.

Funston then went to Manila and secretly organized his expedition, consisting of seventy-eight Macabebes who spoke the Tagalog language, and four American officers—Capt. Russell T. Hazzard and Lieut. Oliver P. M. Hazzard, Capt. Harry W. Newton and Lieut. B. J. Mitchell and four former insurgent officers—one Spaniard and three Tagalogs.

They sailed from Manila on March 8 on the gunboat *Vicksburg;* and after six days the *Vicksburg* put out her lights and ran in shore on the north of Luzon. The party landed and marched twenty-five miles to Casiguran, where the former insurgent leaders exhibited the American officers as prisoners, and said that they had captured them and were carrying them to Aguinaldo. General Funston and the other American officers were kept in prison for three days to deceive the people of the settlement, who were strongly loyal to Aguinaldo, and letters were sent forward to Aguinaldo bearing the forged signature and the seal of Lacuna. One of these letters gave news of the progress of the war, and the other said that the writer was sending him reënforcements. The forged letters completely deceived Aguinaldo.

On March 17 the party started on a ninety-mile march to Palanan, where Aguinaldo's headquarters were, through a rough, uninhabited country, eating only shell-fish and suffering many hardships. After a march of seven days and nights they halted eight miles from Palanan, and sent to Aguinaldo's camp for food. The Filipino chief sent supplies and directed that the Americans be kindly treated, but be forbidden to enter the town.

By a skilful manœuvre, to avoid attracting attention, the American officers did accompany the Macabebes and the Tagalog officers into the town. The Spaniard of the party, when he thought that Aguinaldo's body-guard had had their suspicions aroused, ordered an attack. Three insurgents were killed, and in the confusion that followed one of the former

insurgent officers arrested Aguinaldo, saying, "You are a prisoner of the Americans." General Funston had already openly taken command of the party. Some of Aguinaldo's officers fled and others were captured. The party returned to the *Vicksburg* with Aguinaldo, and arrived at Manila on March 27. Aguinaldo, who had on January 28 proclaimed himself dictator, and had been living at Palanan, was imprisoned in the palace, where his former generals and his mother and his wife were permitted to visit him.

General Funston, who had held the rank of Brigadier-General of Volunteers, was on March 30 promoted by the President to the same rank in the regular army.

Within a half a decade General Funston has risen from obscurity to his high rank by his restless and energetic courage. His early life was dull and unexciting. He was born in 1865; and when he was two years old his father moved to Kansas. He attended the public schools, and finally the University of Kansas at Lawrence, where he was considered a rather poor student.

Funston left the University without graduating, and became a newspaper reporter, giving up his desk before long to collect botanical specimens for the government in the Bad Lands of Dakota. He took part in the expedition to the Death Valley in California in 1891. His party spent a considerable time in that fiery sink, suffering terribly. Of all the members of the expedition Funston is the only one now living who is still sane. In 1893-4, he went north to botanize for the government in Alaska. He had some scruples about undertaking this trip, because as he said his botanical knowledge did not "extend much further than knowing a violet from a sunflower." He bought a few text books, however, and got to know a little about Arctic flora before he started, so that his trip turned out to be valuable after all.

His winter was full of adventure. Once, in his canoe, he came across a fleet of English whalers and he and one of the Captains got up a yarn about England and America being at war. The other Captains and all the crews were much alarmed and were preparing to hide in the ice for a year or more, when the two jokers told them so far as they knew Uncle Sam and John Bull were still patting each other on the back.

Funston went to Cuba in August, 1896, on a filibustering expedition. This was the first step in his military career. About two weeks after his arrival he was made a Captain and placed in command of two guns. He commanded these guns in the twelve days siege of Cascorra, and in the engagement at La Machucha. He took part in the battle of Desmayo, the Cuban Balaklava, on October 8, 1896. "At Desmayo," he wrote, "that little force of 479 Cubans rode against magazine-rifles firing seventy shots a minute, and breech-loading artillery, and held their position in the face of that pitiless fire until fifty-two per cent. had tumbled from their horses killed or wounded."

After Desmayo, Gomez, under whom Funston was serving, marched to meet Calixto Garcia near Guimaro. Guimaro, although defended by eleven small forts, was attacked. On the second day, Major Osgood, of Garcia's force, who had charge of the artillery, was killed, and Captain Funston took his place with the rank of Major. He was created chief of artillery the day Guimaro surrendered. Subsequently he took part in numerous engagements east of the Cauto River. He fought at Banes, and on May 11, 1897, bombarded the Sama forts for General Torres. He commanded the five guns used in the attack on Las Tunas on August 28, and at the end of the operation was promoted to Lieutenant-Colonel. On December 12, 1897, while crawling along the ground, suffering cruel pain from bullet wounds in both lungs and other injuries, he was captured by the Spanish. His old habits of mind promptly came to his assistance, and giving the Spanish certain facts about the Cuban army, in which much poetry was mixed, he managed to get permission to leave Cuba. He went to New York where it was at first thought he would never recover from his wounds; but very soon he was lecturing in Kansas about his exploits.

When our war with Spain began he offered his services to his country. Governor Leedy of Kansas appointed him Colonel of the 20th Kansas Regiment. While the regiment was being drilled, Colonel Funston was called to Tampa to consult with General Miles about the situation in Cuba. In Tampa he went about in civilian clothes, saying that when there were plenty of sure-enough fighters around he would not pose as a warrior—not without stimulants at least. He returned to Kansas and took his regiment to San Fran-

cisco. Between drills, Colonel Funston used to run over from San Francisco to Oakland, where he fell in love with Miss Eda Blankart, whom he married. Then he sailed for Manila at the head of his 1,300 men.

It was not long before the cable began to bring news of the 20th Kansas. Towards the spring of 1899, the country was thrown into amazement by two startling feats of its Colonel, and several of its members. Funston's own words give a sufficient description of these exploits. He wrote:

"I swam the Bagbag river with the other officers and 4 men of the 20th Kansas under a hot fire, April 20. The Rio Grande River I crossed two days later on a raft with 45 men and after a desperate fight drove 2500 of the enemy from an intrenched position."

In recognition of his gallantry and skill, he was appointed Brig.-General of Volunteers on May 3, 1899. Shortly after this he sailed for the United States with his regiment, arriving in San Francisco on October 11, 1899. The men, then only 708 in number, were met by the Governor of Kansas and a large delegation of happy friends for whom they paraded before proceding to their homes. The people of Kansas presented General Funston with a handsome sword. But on the 23d of November, he sailed again for Manila to complete his work and, as it was to prove, to round out his fame.

The distance between this country and the Philippines makes the soldiers seem vague and uncertain figures. Only occasionally when they perform some extraordinary deed do they stand out clear and firm in the sight of the public. General Funston stands so now and gives promise of keeping the position. His rise has been rapid, almost without precedent; but it has been won by extraordinary achievement.

Five years ago he was unknown; to-day at the age of thirty-six, he is a Brigadier-General in the United States Army. He has gone through the horrors of Death Valley; he has lived through a long Arctic night; he has fought for a people whom he thought oppressed; he has swum rivers, driving savage enemies before him; he has led bloody charges; and last of all, he has captured the leader of the Filipino insurrection. A man who has done all these things is a man who sets the blood tingling and gives wings to the imagination.

PRESIDENT DIAZ AND HIS SUCCESSOR

AN EXPLANATION OF THE POLITICAL SITUATION IN MEXICO — THE MEN WHO ARE NATURALLY IN THE LINE FOR CHIEF EXECUTIVE OF THE "DESPOTIC REPUBLIC"

BY

J. D. WHELPLEY

"I SHOULD like to live fifty years to see the result of the seed I have planted," remarked General Porfirio Diaz, the President of Mexico, to a friend but a few days ago. This is some of the "seed":

Twenty-four years of peace for a nation of 14,000,000 people who had been at war with others and among themselves for half a century; compulsory education; religious freedom; safety for foreign and domestic life and property; the creation of a middle class; a modern army of 38,000 trained soldiers armed with Mauser rifles and officered by graduates of a modern military school; representation for Mexico at the capitals of all foreign nations of importance; an increase from 420 to 8,000 miles of railroad; an increase from $35,000,000 to $78,000,000 in the output of precious metals; an increase from $20,000,000 to $51,000,000 in imports; an increase from $23,000,000 to $75,000,000 in exports; the investment of $30,000,000 of foreign capital in cotton mills and millions more in breweries, paper mills and many other forms of enterprise; a general increase of wages paid for common labor from eighteen to sixty

cents a day; a government the expenses of which are always within its income and which has an accumulated surplus in bank of $18,000,000 in currency; a capital city with 400,000 inhabitants in which is now being spent about $10,000,000 for water, light, sewers and pavements.

This reads more like a harvest than a seed sowing, but it is looked upon as only a beginning by this ruler who entered his kingdom as the man-on-horseback, but who will be known to history as a prince of peace.

His rule did not commence until he was past fifty years of age, and it is to-day, at the end of twenty-four years, as vigorous and effective as ever. That this rule cannot last very many years more the Mexican nation now mournfully admits. With keen anxiety the possible successors to the President are being weighed in the balance in hopes of finding another whose energies and statecraft are of such heroic mould as to warrant his being entrusted with the cultivation of the crop sown by his predecessor.

FIGHTER AND STATESMAN

In the council room of the municipal building in the City of Mexico hangs an oil painting, the portrait of a soldier. There are many other portraits in the room, some of them occupying more prominent places upon the wall, but this one personality dominates the entire group. The face is unmistakably that of a Spanish-American. The complexion is dark, and the cheek bones are high. The eyes are sombre, but they have a keen and flashing glance. It is "the man-on-horseback," ambitious, daring, content only with supreme leadership and working relentlessly toward that end. To him death is the only acceptable alternative to success. This is General Diaz, as he appeared in 1877, when, at the head of his victorious army, he made himself President of Mexico.

To-day, in the executive office of the national palace, but a stone's throw from the municipal building, sits a man best known to the world as the builder of modern Mexico. He is the same Porfirio Diaz in name, and still President of the Republic, but his character has changed—the emphasis is now on other qualities. This change is written plainly upon his face. The same lines are there, but they have been broadened and softened. The hair is white. His eyes are deep and thoughtful. Statesmanship and the arts of peace have dominated and subordinated the military instinct.

"If Mexico should get into trouble she would have to look to her great northern neighbor for support, and I know of nothing so binding between nations as a commercial tie." Such a sentiment would have been incomprehensible to the leader of 1877. With the leader of 1901 it is the inspiring motive of his foreign policy. He has faith in its truth, for, by following its dictates, he has in twenty-four years brought his people farther along the road towards civilization than they had gone in five centuries preceding.

The credit for this tremendous accomplishment must be given to President Diaz. Those who have served him faithfully and intelligently in carrying on the work would have been powerless without his leadership. He has been the whole government in every sense of the word, and he is to-day; for, notwithstanding the Constitution of 1857, Mexico is governed "without the curse of parliamentarism," and by a power centralized in one mind. It is a government entirely rebuilt with each succeeding administration, and from the top down. Always in evidence—always behind every civil order—is the military arm knowing no law other than the will of its leader, recognizing no constitutional principle other than the integrity of Mexico as a nation. This army was never in better condition than it is to-day, and it constitutes a formidable military showing for such a minor power.

PROGRESS REPLACING POMP

When the ill-fated Maximilian became ruler of Mexico, he spent the first hours of his administration designing new orders and decorations for his favorites. The first plans put forth by the administration of President Diaz were for great railroad systems, and for laws to encourage the development of the country by foreign capital. The man of pomp perished miserably. The man of military and commercial genius will live for ever in his works, for with his coming dated the birth of modern Mexico. To make a throne of bayonets and to sit upon it in comfort is an unique task; but by cushioning it with a constitution and by making his rule the best that Mexico has ever had, President Diaz has kept the mass of the Mexican people more than content and so busy reaping a harvest of industry that the

art of revolution, which had reached such perfection among them, is now well nigh forgotten.

THE SECRET OF IT ALL

President Diaz once appointed a young man to a government position in order to assist him in his studies for the bar. Not long afterwards, the complaint reached him that the young man was so fully occupied with his government duties that he had no time to study. "Let him do as I did," said the President grimly, "study until two or three o'clock in the morning with a wet towel wrapped around my head." In this remark President Diaz revealed one secret of his success—unflagging industry. To go to bed at ten P. M. has been his rule for years. He gets up at six and immediately goes to work. He takes no relaxation until every duty of the day is disposed of. Exacting, keeping personal control of the affairs of every village; he surveys his country every morning, as the owner of a vast estate upon whom rests the responsibility for the prosperity of the land, and the happiness and comfort of all the people. Over all he maintains a web of secret service which covers everything as with a fine net. An unfriendly move is known at the National Palace as soon as it is made, and it is as quickly checked by such stern, repressive methods as are possible to a ruler of a country which is republican in name only. In these later days the system has become more preventive than oppressive.

With the day's work disposed of, a horseback ride or a drive is the President's recreation; and two or three times a year he goes to the mountains to hunt big game. His home life is an important part of the existence of this man of action. Donna Carmen, his wife, is beloved by all who know her, and she is credited with being a strong factor in the softening of the rugged outlines of her husband's character. He still pursues a purpose, an enemy, his work or his pleasure, with the same relentlessness with which he pursued the Presidency until it was his.

Born in Oaxaca, of Indian and Spanish descent, he has the admirable traits of both races, and in his development the defects of both have been eliminated. He is calm and deliberate of speech, business-like in his manner, and he always keeps the topic before him well in hand. He has a keen insight into human nature, and a wonderful readiness in grasping the details of the practical affairs of life. Experts who have appeared before him to advocate the adoption of some feature of a more civilized life than is found in Mexico have been driven to renewed study to enable them to parry his intelligent and searching questions.

A REPUBLICAN DESPOT

But for nearly four score years General Diaz has drawn upon the resources of an iron constitution until it now shows signs of wear. To this day he has held all power jealously in his own hands. Governors and ministers have become prominent and have achieved even international reputations, but they have instantly vanished if it was so willed by the Chief Executive. He is a self-constituted President in a country which, though provided with a constitution guaranteeing freedom of suffrage to the people, has never witnessed the exercise of this privilege. With all the progress made in the arts of peace and science, no progress has been made by the masses in the art of self-government, other than the acquisition of a better self-control, which is the necessary concomitant of peace and prosperity. The President has been blamed for this lack of progress. Those who believe that the hope of Mexico lies in her Indian people assert that in the past fifteen years they could have been taught local self-government. These people believe that President Diaz could have put into motion the machinery of republicanism provided by the law of Juarez, but with which the people have never been familiarized. Whether there be blame or not, the fact remains that this has not been accomplished. President Diaz does not believe a Latin American people can be governed under a constitution modeled after that of the United States. Personal, military, centralized government, is his recipe for success with Spanish-Americans. Who shall say in the light of what he has done that he is wrong?

If a Diaz could live forever, then there would be no flaw in this system. But who is there to take the leadership after him? Two men now occupy the public eye, General Bernardo Reyes, Minister of War, and José Yves Limantour, Minister of Finance. The latter is now well known internationally. Fifteen years ago he was unknown even to Mexican politics. Young, rich, a capab

lawyer and economic student, President Diaz brought him forth from his comparative seclusion and placed him in the cabinet. Keenly intellectual, highly educated, and with a personal knowledge of all the principal countries of the world, this man presents a unique figure in the group of Central American statesmen. After a long and hard day's work in his department he finds his recreation in the library of his palatial home which is crowded with treasures of art, or he seats himself at the piano and demonstrates his familiarity with the work of the great masters of music. He is a Mexican, but of French descent. Inspired by enthusiasm and ambition, and aided by his unusual mental equipment, he has done more to modernize the national finances and the fiscal policy of his country than all his predecessors together.

A new banking system, an annual public surplus, the abolishment of many obnoxious schemes of taxation, a stable paper money, greater freedom for foreign capital—these are a few of the things accomplished by Minister Limantour. During the recent illness of President Diaz this minister acted as provisional President. He is favored by the financial interests of the capital, and foreign investors find full protection under his administration. He is ambitious. Why should not the provisional become the real President of Mexico?

THE RULE OF THE MILITARY

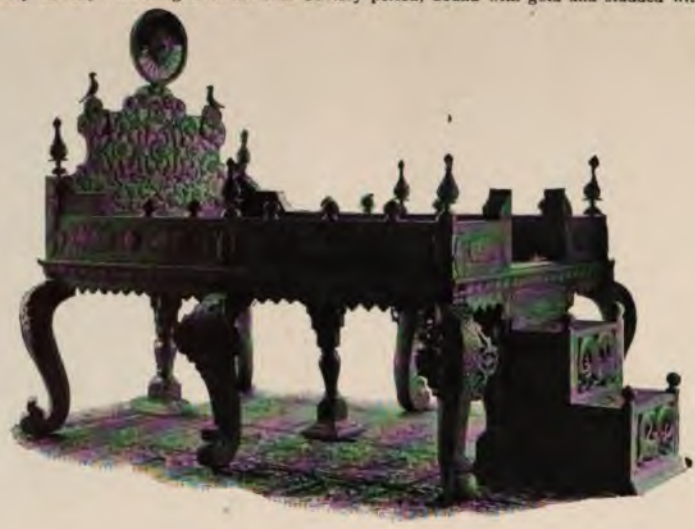
The answer to this brings into clear relief the difference between the republic of Mexico and a real republic. There is a constitutional way of filling the office of President by referring the matter to the people, should that office suddenly become vacant. But this course has never been, nor is it likely to be followed. Should President Diaz die suddenly, the Minister of Foreign Affairs, now Senor Mariscar, well known in the United States, would call congress together at once to select a new President. Congress would in form order an "election," but in fact whoever controlled the situation would be declared elected. The people of the class called in the United States, "the mass of voters," would not be consulted. It would seem natural that Minister Limantour should step into the Presidential office, but Mexico is a military country, and the Mexican people are imbued with a sentiment which demands an element of the spectacular in their leaders. Limantour intellectually commanding, is yet deficient in personal magnetism, and lacking the military instinct. He is accused by some of showing French sympathies.

It is General Bernardo Reyes, the idolized leader of the army, to whom the popular fancy now turns. The favorite of President Diaz, the hero of the student colony of the capital, the dashing soldier who has raised the pay of every man in his army, impetuous, fiery, poetic and sentimental, he is the man of the day, and no considerations of caution can stem the tide of popular approval. He is the man-on-horseback come again. That he will meet the opportunity and the responsibility, should they come to him, as they were met by the present ruler, is now the prayer of the Mexican people, and of the hosts of foreigners who live in the country.

THE NEW MEXICO

Should President Diaz still live to a greater old age, the people of Mexico would wish him to select his successor, to install him in office, and to start the new government in the right direction. Limantour and Reyes both have strong followings. They are both men of the world, familiar with modern conditions. They are both intimate with and friendly to the Americans. They are fully aware of the importance to Mexico of continuing the Diaz policy in the treatment of foreign capital. Limantour is not a strong man physically, and many doubt his ability to carry the executive load for a long period even if it should be placed upon his shoulders. The general opinion among the leaders of the Mexican people is that the succession to President Diaz will be accomplished with the minimum disorder possible by a short term for Limantour as provisional President, to be soon followed by General Reyes, who holds the key to the present political situation in his control of the army. The people of Mexico have been educated by President Diaz to the value of tranquillity, and irresponsible agitators would now find it difficult to create serious disturbance. The weight of public opinion favors a peaceful solution of the political crisis that draws nearer, and in this the people will probably have their way. The future safety of Mexico lies in the growth of the middle class, which has sprung into existence with the recent adoption of modern methods.

PEACOCK THRONE OF THE SHAH, AT TEHERAN.
Minutely carved, with designs of the 16th Century period, bound with gold and studded with gems.



RUSSIA'S CONQUEST OF ASIA

THE QUIET ABSORPTION OF PERSIA ON ONE SIDE WHILE MANCHURIA IS ACQUIRED BY DIPLOMACY AND FORCE ON THE OTHER—RUSSIAN CONTROL ACROSS ALL ASIA AND HER THREAT TO BRITISH INDIA

BY

JOHN KIMBERLY MUMFORD

RUINS OF A MOSQUE

ON the present map of Asia, re-colored by what has happened lately, Russia's purpose is written big and plain. It can scarcely be misread any longer. The frontal line of Russian control extends in a huge crescent from the foot of the Persian Gulf away around to Port Arthur, and it is being drawn closer day by day—ever a completer cordon about India. All the western horn of this crescent has been added in the short time since the Russian loan was made to Persia. At one stride Russia has passed forward from the Caspian to the Arabian Sea, and throughout the entire length of the line she will be ready, before very long, to move at a moment's notice. Her purpose is so large that she dare not, and so enduring that she need not, act until preparation is complete.

In China the time was ripe. For a year and a half the railroads had been packing Russian troops and supplies down to the Manchurian border. We have seen the sequel. On the West, the Muscovite machinery is not yet perfected; therefore she avails herself of peace and England's preoccupation. In the West of Asia, as well as in the Far East, Russia is making hay while the sun shines. Only the methods differ in the two regions.

A look at the way of the Russian in Persia does not leave upon the mind any such grim picture of marching legions, of assault and pillage as in Tien-Tsin and Peking, but rather the fascinating image of the prestidigitator. The hand he displays to the audience is seldom the one more essential to the trick. In the absorption of Western Asia violence has been set studiously in the background; outward evidence of the ancient conflicts is put away. Nevertheless there is maintained a cogent and continual reminder of potential power. Down the long military road which traverses old Armenia spurs forever the Cossack, silent, suspicious, in peace eminently prepared for

war, and plainly conscious, even in these solitudes, that the eyes of the world are upon him. His horse is munching government grain in every roadside *khan*, and in the stables of the many military posts throughout Transcaucasia; the jingle of his spurs and the clatter of his sabre are in every post-house all the way to the Persian border.

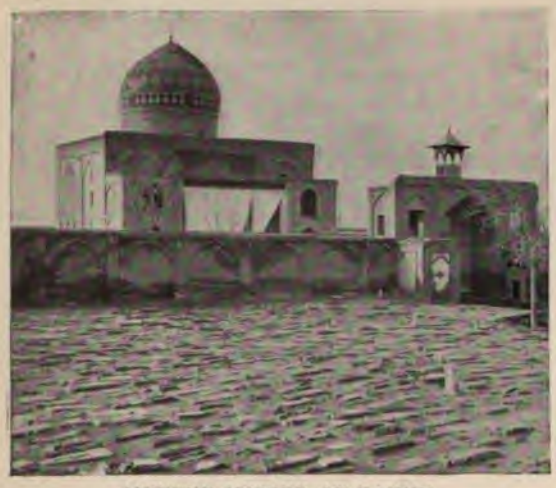
It is a long and perplexing road that the Russian has had to travel on this side of Asia, to arrive at his present vantage point on the way to the Persian Gulf. Over a portion of it he has been compelled to journey more than once, but, observant of a schedule made long ago, he has made haste slowly, watching, waiting, keeping the peace, and winning most of his later victories by the rouble—or, some say, the franc—and by his colossal vigilance and patience. The forward movement in the West in its present stage is still, but it is ceaseless, and more rapid by far than when the chief agencies were powder and the sword. One need be in Persia only a little time to discern the Russian predominance. Persia is Russian. It is manifest in the conditions of trade, the management of the military, and the incessant increase in the number of Russian subjects and the volume of Russian commodities in the bazaars, and it is recognized by the populace. More eloquent than all other indications is the custom, arisen of late among the Persians—some of them the foremost in wealth and influence—of adding the Russian termination "off" to patronymics as old as Iran itself. This is, to be sure, an illustration of the business sagacity of the Persian, but it shows which way the wind blows. It is all a study in the efficacy of the peaceful method, a revelation of Muscovite versatility.

Everywhere, behind him, along this Western tier, the tenacious marks of the Russian's predecessors are disappearing; everywhere he is substituting for them his own memorials in brick and stone, steel, and the enginery of steam and electricity.

In Batoum, not so long ago a dirty, straggling Turkish village, stagnating in the midst of a miasmatic swamp, there are straight streets, boulevards, excellent hotels, well-

MILITARY GEORGIAN ROAD

View of village Lars, with the Tower of the Princes Doodarov



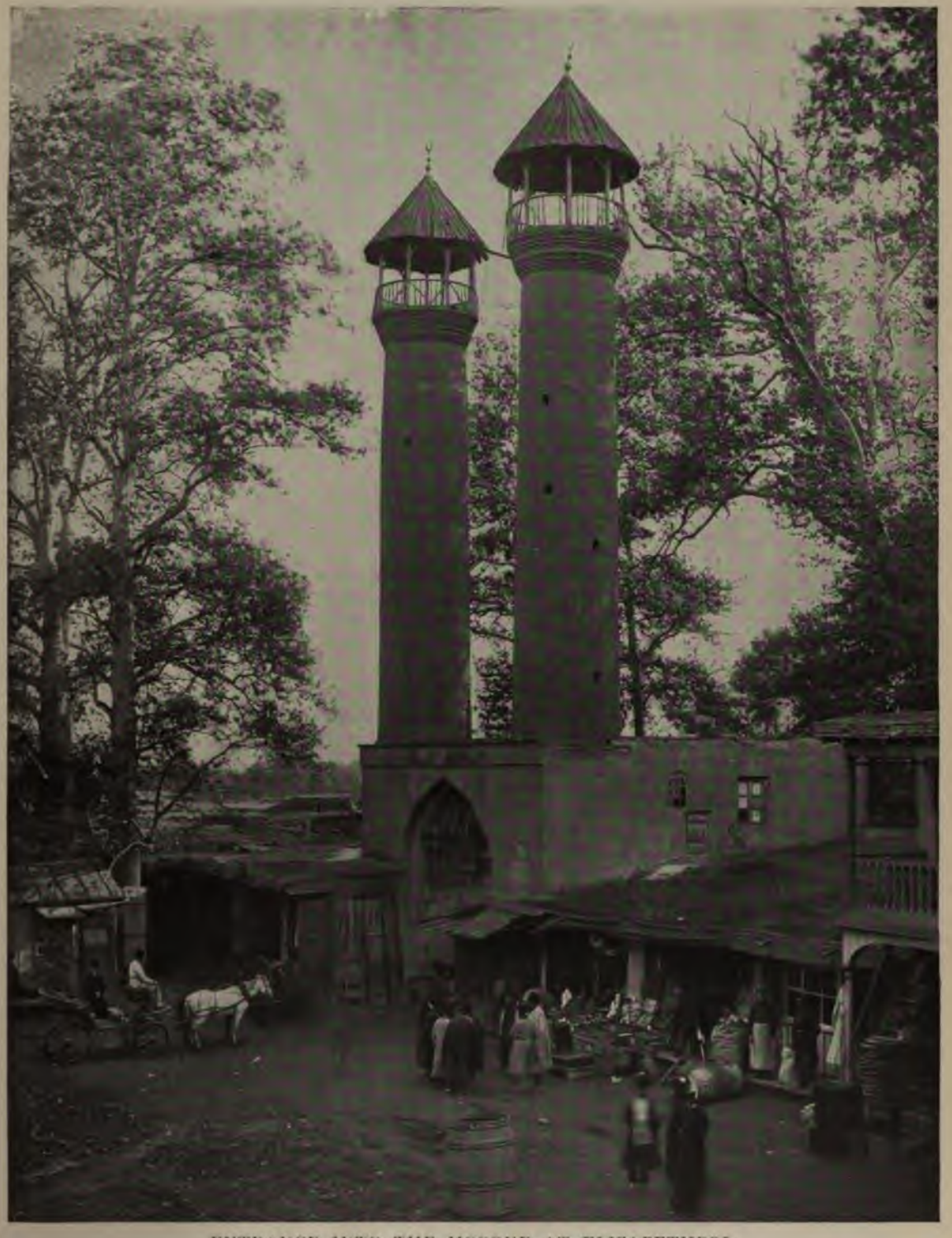
ANCIENT MOSQUE AT KASVIN.
One of the wonderful glazed-tiled temples which are scattered throughout Persia.

stocked stores, and a large shipping anchored under the wakeful guns of long fortifications whose strength is past finding out. From thence a railroad which, using petroleum for fuel, knows not smoke nor cinders, bears the traveler across the Caucasian isthmus, where once was a rough and most perilous way. Troglodyde dwellings of incalculable age, and crumbling castles taken by the Russians in storm and assault, look down now on massive causeways, bridges and culverts which bear witness to the engineering skill of the new rulers. All along the way are comely habitations; only here and there, in the long reaches, are seen the black felt tents and earth-burrows of the nomads who have turned out their sheep over some river bottom. There are crowds about the tidy stations, crowds of cleanly, well-ordered people, but seldom a European costume. Instead, one sees the flowing skirts of the Georgian surtout, with cartridge cases across the breasts of it, the boots, the enormous felt cloaks, reaching to the heels, the prodigious sheepskin hats, and the penetrating eyes and bristling beards of the reconstructed. They are quiet, dignified, ceremonious, but alert. It is hard to realize that these are the once half-savage people whom the Russian had to fight back step by step through these all but impassable mountains until he won to the Kur and there set up his capital. The two-edged *handjar*, a species of short, straight sword, still swings in its sheath at their girdles, but its mission is chiefly one of ornament; the cartridge cases are filled with dummies, sometimes of silver, sometimes of steel or bone, according as the wearer has prospered.

In Tiflis, which crouches beside the river, one reads the same story of a new birth. Perched on a mountain side, overlooking the busy city of 160,000 souls, is the ancient Georgian stronghold, a ruin, with decorations in stone on its towers, telling of Oriental dynasties long ago passed into tradition. Under its hoary watchmanship long trains come and go, in and out of a handsome station, more crowded at train time than the Grand Central at Forty-second street in New York. Hundreds of cabs, whose bushy-bearded drivers have faces like ripe red apples, ply hither and thither; European *prime donne* are singing in the theatres; claw-hammered waiters are running about under the electric lights, serving dinners that one might expect to find on Upper Broadway. On the Mall in the great park there is the clinking of many glasses and the murmur of many voices, and music until far into the night. It is Europe. It is thus that Russia is making the Caucasus forget.

But the old civilization dies hard. Everywhere it asserts itself in sharp and really pathetic contrast with the new. Along the river bluffs cling decrepit rookeries which belong to the old order. Here the unregenerate dwell and barter. The wares of the wine shops are still exposed in great ox skins; the costumes of Asia are here, and the Mohammedan cries to his God and his Prophet. So in Baku; there are Persian mosques going to decay, and a few overfaithful Guebers, fire-worshippers, still fall into occasional ecstasy at the sight of the flames which roar and dart skyward above some ignited oil well. That is the last survival, probably, of the original Iranian life and faith on Russian soil. All down through Transcaucasia the ruins are being converted into homes of the soldiery or the priesthood, or destroyed to furnish stone for road building, and the brick schoolhouse, with its boys in uniform, is rising to mark the place where they stood.

There is peace; there is an unceasing presentment of the light side of life; diversion is made easy. But behind all, dominant over all, not to be overlooked or forgotten, is Force. Every third man you meet is in a uniform of some sort. The train conductor is a high military personage, the guards are



ENTRANCE INTO THE MOSQUE AT ELIZABETHPOL

The entire region in Transcaucasia shows these Persian landmarks, but the costumes of the people in the picture, the phaeton which "stops the way," are Russian

PERSIAN SOLDIERY AT ITS BEST

fighting men, who stand at attention while the train halts, who salute soldier-fashion, and who wear their signal flags on the hip, after the manner of the bayonet. The street-car conductor of the town may be ordered to the front in China to-morrow, and the policeman who shouts commands to Mohammedan muleteers in the streets of Tiflis, brandishing his sword for emphasis, is a very decent model of a swashbuckling cavalryman. As it is here, so it is coming to be on the Persian border; so it is always and everywhere where this magician of the East sets foot—the Cossack in reserve.

Over this new civilization which he is building up, the Russian keeps sedulous watch and ward. It is the scrutiny of a camp in war time. There is no talk of partition here; there is no talk at all if he can prevent it. The passport system is ironclad almost beyond belief. You can have neither food nor lodging in any hostelry, however humble, without surrendering your passport, which is promptly sent to the Chief of Police, by him to be examined, entered upon his books, and stamped. No more can you give up your apartment and leave the place without a repetition of the formality. The passport of a traveler returned from Persia looks like a collection of postmarks. All this has its purpose and its indubitable advantages. With empire at stake, the Russian never relaxes his scrupulous attention to the playing of the game. He is particularly careful to see who and what goes into Persia. Every post station is in effect the office of an examining board, and to renew your billets you must answer whatever questions the inquisitor—invariably polite and invariably solemn—sees fit to propound. This guard over the approaches to the Shah's country is more than the ordinary solicitude of the creditor. It is parental. The "shadow" is everywhere. All the way down from Akstafa note is made and track kept of all travelers, with a special lookout for the Englishman. Russet riding-boots, which by the more ignorant of the Russians are looked upon as an accoutrement peculiarly British, are by them accounted almost *prima facie* evidence of some hostile intent.

In Nahkitchevan, the burial place of Noah, and the last city of any importance within the Russian confines, my passport, along with some others, was long considered. At last the Chief of Police, a Jupiter in most elaborate uniform, came out from the conference he had been holding, and, with Chesterfieldian grace, taxed me with being an Englishman. It transpired that another American citizen, whose papers were submitted at the same time, had been in the city of Tabriz, and in the absence of any American representative had his credentials passed upon, before leaving Persia for Russia, by the British Consul. Some Russian clerk, seeing the British seal, and either unable to decipher the words, "charged with American affairs," or willing to do a small mischief, had written him down English, and the Chief of Police, taking inventory of the waiting voyagers, had picked me out as the subject of Her Majesty. I

"THE HOUSEHOLD" TROOPS

can scarcely believe that so highly qualified an official could have been misled by the boots, but it would be interesting to know what would have happened if his impeachment had been true.

This aversion to the Englishman is manifested in many ways; it is well nigh atmospheric. There is one bit of Russian history, apparently not widely known, which seems to explain this attitude in a measure, and certainly throws light on Russia's procedure in Persia, and for that matter her whole propaganda throughout the breadth of Asia. When the Czar Paul I., in 1801, combined with Napoleon for an expedition overland with the avowed purpose of ruining the British establishments in India, making the native sovereigns dependents of Russia instead of England, and acquiring commercial mastery of the whole region, he wrote in his voluminous orders to Orlof Denisoff, *ataman* of the Don Cossacks, who composed the Russian force: "Be sure to remember that you are only at war with the English, and are the friend of all who do not give them help. On the march you will assure men of the friendship of Russia."

Russia's progress to the southward and eastward for the past seventy years has been, and to-day is, a literal fulfillment of those mandates in their entirety. It is customary to call that progress mysterious, but a far greater puzzle than the Russian purpose is what England means to do, the meaning of what she has already done. In Persia, where the evidence of British recession is so plentiful and where every day the Russian arm, unchecked, stretches out farther and farther, one can hardly understand what the British Premier meant when he told the British people they would soon have a chance to know more about the Persian Gulf. They seem apt to know a great deal less first, and the intimate history of what has happened since then is still a sealed book which Lord Salisbury's government does not seem inclined to open.

Sir Henry Drummond Wolfe, former representative of Great Britain at the Court of Teheran, secured for English corporations, by virtue of the loans, concessions of all sorts, looking to the development of Persia, banking charters, mining charters and the like. He retired from the post leaving the English in possession of material rights and privileges throughout the Kingdom, and in control of the custom house receipts of the Gulf ports as security for interest on monetary advances. That position the present British government has to all appearances abandoned. In England's refusal to guarantee the Persian loan

FAMILY OF PRINCE OOROOZBIEFF

RUSSIAN AMBASSADOR ORLOFF LEAVING THE PALACE OF KHAN, AT RESCHT

of 22,500,000 roubles lay the opportunity Russia had long looked for, and to her endorsement of the obligation she attached the most sweeping and subversive of conditions, including, first of all, the wiping out of all debt to England. Prompt conformity to these has been exacted. The money which had been borrowed from England was all repaid, in compliance with the Muscovite demand, within two years after Russia had taken up the sponsorship and the rights that accompanied it.

To Britons everywhere, and perhaps particularly to those resident in the East, the practical retirement of England from Persia has been a source of deepest chagrin, the more so that apparently they can neither understand nor explain it. The sudden surrender of privileges which have been centuries in the acquiring and of influence in territory which is a natural outwork of the Indian possessions, suggests a radical departure in policy, and the more strongly the more it is considered a gigantic *quid pro quo*.

And so, although the Cossack halts at the boundary, the Russian engineer corps, rapid, noiseless, furnishing no bulletins of its prog-

KALMUCK FAMILY

BETWEEN JULPA AND TEHERAN

Division superintendent and engineer of the Indo-European Telegraph Company with inspection and repair corps going over the lines

ress save to headquarters, goes on into the Persian country, marking out the way for the railroad to the Gulf, which for two hundred years has been Russia's primary objective. In some directions, on her own soil, the tracks of the approaching lines have already been laid, but it is done without any flourish of trumpets, and the regions through which the routes lie are remote from the paths of general travel, so that little is learned of the progress made.

It is necessary to believe that the railroad line from Tiflis to Kars will connect, sooner or later, with the road through Asia Minor, for which concession was not so long ago granted by the Porte. By way of Tiflis, Baku and the Transcaspian line from Krasnovodsk, by Kars, Khoi, Tabriz and Teheran, or yet again by another line which has been surveyed directly between Tabriz and Baku, touching the coast at Astara, the termination of the Russian land boundary, Russia will then possess unlimited transportation to the Trans-Siberian line, and so to the Pacific, to say nothing of the possibly more important approach to the point of British contact below Herat. In the labor of surrounding India, Constantinople is not forgotten. Russia crowds both ways and all ways.

One small incident in connection with the

TYPICAL RUSSIAN MILITARY ROAD

Asia Minor concession shows how narrowly the Russians have watched developments in the East, how long in advance they have planned the steps which are now being taken, and with what nicety they have sowed throughout all Asia the seed from which they are eventually to reap such a stupendous harvest. In Trebizond there lived a Russian, who held the billet of Consul for Riza, a small and altogether unimportant seacoast village some leagues away, which he seldom visited. In 1899 he had been for sixteen years in Trebizond, engaging in no business, but drawing pay as consul all the time, living comfortably and in good neighborhood with all men, and in no wise burdened with the duties of his consulate. He had served in the Russian army, in which, his neighbors understood, he had ranked as a colonel of engineers. When the grant for the German railroad through Mesopotamia was announced, as the first fruits of Emperor William's pilgrimage to the East, the consul at Riza suddenly packed up and started for the interior, whence, after some days, he went to Constantinople and then to Russia. The news that followed was the news of the Russian concession. The consul for Riza, colonel of engineers, had merely been waiting in Trebizond quietly, *à la Russe*, for sixteen years, and the thing he had been put there to wait for had happened. Such instances are illuminating. In their light the admission by England, at last, of a Russian consul to Bombay, always refused hitherto, takes on a new meaning.

But whatever the ultimate object, it seems beyond question that the opening of the rich Persian fields to trade by means of railroads and wagon roads will prove their regeneration. In nothing is the difference between the two régimes more manifest than in the roads on

IN THE DARIEL PASS OF THE CAUCASUS, NEAR THE RIVER RHOOMARY

RUSSIANS OF RECENT MANUFACTURE

the two sides of the Aras river. In the Russian territory the military road, running south from Akstafa, is superb, and is still in process of betterment, down as far as the rough pass which nature has cut through the mountain chain bordering the river. There, apparently of purpose, the road-makers have stopped work, and the way through the cut, running for the most part in the bed of a turbulent stream, is at some seasons wholly impassable. To the traveler that is a foretaste of Persia. There is a similar gorge on the Persian side, after which one comes out on what a Persian is content to call a highway. It is broken by landslides, creeks and irrigation ditches, and though in some places fairly good in spite of neglect, is for a great part of the way indistinguishable from the waste of mud, gravel and rock, or the water courses through which in many localities it runs.

Persian inactivity in the matter of road building is, of course, due in great measure to national poverty and inertia, but for years, until the latest understanding with Russia, there entered in, also, the theory upon which the Ottoman government has so stub-

KURDISH FAMILY

such brilliant prospects, will survive the tension to the end of its charter term, which is ninety-nine years. Its prerogatives, like everything else that is English, have been materially curtailed since the Russians obtained the whip hand. Its chief support was derived from lending money to the Persian government at interest of fifteen per cent., and the importation of silver bullion to be struck into *krans* (the commercial unit of value, about ten cents) in Teheran. That part of its business has been withdrawn since the Russian loan, and the bank is not allowed to take mortgages on property. It conducts a foreign exchange, and has, under the provisions of its charter, a monopoly of the issuance of paper money. This currency was made the means of an attack on the institution about two years ago, which only chance prevented from resulting disastrously. The paper issue was industriously collected throughout the kingdom, and a vast quantity of it presented for redemption at the Bank's branch in Tabriz. It so happened that an unusually large amount of silver was stored in the vaults at the time, preparatory to shipment, and the demand for specie was met. Before returning the paper to circulation, the Bank officials improved the opportunity to stamp it "Payable only in Tabriz,"—or Shiraz, or Teheran—a certain amount for each branch throughout the kingdom. But the end is not yet. The Russians have established a *banque de prets* at Teheran, to which a great part of the Persian business is being diverted, and branches of which are to be started in other cities in competition with the English concerns.

It is in such and divers ways that the Russian power is sinking its roots deeper and deeper into Persian soil. It is never demonstrative, but it is never idle. A single memorandum concerning the kingdom's financial condition is sufficient to show that Russia's present plan of acquisition can be pursued until the swallowing of Persia is complete, and, given adequate resources, it should not take so long, either. The temporary relief which is afforded by the loans cannot turn back the tide which has so rapidly, of late years, been cutting away the financial underpinning of Persia. Under the stimulus of the principal loan before referred to, the *kran* advanced in value to forty-six, to the pound sterling; but it shortly fell again to fifty-one, and the Shah, attended by his doctors and ministers and wives, and 5,000 other of his subjects as far as the border, started for St. Petersburg.

In the military arm of the Persian establishment, as in nearly all else, Russian influence has become paramount. The Hungarian drill officers, who for years have been employed to control the organization, equipment and training of Persian troops, have gradually been displaced to make room for Russians, thus ensuring perfect cognizance, at least, of what war force the Shah has at his disposal. The effect of the exchange is plain. The Hungarians organized infantry; the new regiments now forming are cavalry, and cavalry that might be transmuted into Russian in a day, so far as dress or tactics are concerned. The commanding officers, in many of them, hold rank in the Russian army; the uniform is the uniform of the Cossack; the weapons—and I have examined several of them in the possession of pickets and patrol riders along the roads of Persia—are chiefly the product of Russian armories.

Again, observe the Kurds. The hardest problem with which Persia has had to deal, since Russia's suppression of the man-stealing Turkomans, has been the restraint of these Western border men, who are a continual menace to Persian peace. No enterprise of any moment can be begun by the Persian government without assurance in advance that during the time required for it the Kurds will be quiet. Nobody has ever subdued these reckless warriors yet, though many have tried it. It is a task no Persian general would undertake gladly. The Russian is beginning to go another way about it. He will use them. Indeed it is not unlikely that in some ways he has used them already. When the Shah, after repeated visitations to St. Petersburg, and corresponding periods of royal extravagance in Paris, was perilously near having worn out his welcome in Europe and still declared that he had no appetite for going home, there came out of Persia, where Russian agencies are in plenty, a most timely and effective report that the Kurds, though they had promised to abide peaceably in their mountains until the Shah's junket should be over, were making ready for an uprising. The Shah promptly packed up and started home, for this was about the most disconcerting news he could receive. Nothing has been heard of the Kurdish uprising since. It was

THE REAL KURDISH CHIEF

of suggestion in its form of construction which is identical with that of the military roads through Georgia and Transcaucasia, even to the rows of posts along the embankments and precipices and the Russian colors on the barriers.

But its real significance is clear only when attention is given to another piece of road building, accomplished by an English corporation several years ago, before British influence in the Shah's country had become a memory. Among the concessions which Sir Drummond Wolfe obtained for Englishmen was that of the Persian Road Company. This was organized, with charter rights, for the building of a toll road from Teheran to the head of the Persian Gulf. The enterprise was financed by the Imperial Bank of Persia, another of Wolfe's creations. Surveys were made of the entire route, and the road actually built from Teheran to Kum, a distance of about seventy miles. At the end of three years £200,000 had been expended, but the Persians rebelled at the payment of tolls, and refused to use the road. The expensive bridges were useless, for in the Shah's realm time is the cheapest of all commodities, and the natives, when the streams were flooded, waited for them to subside, usually a matter of only two or three days, rather than use the bridges. The Bank still keeps the road in repair in hope of selling it. The customer is at hand, and waiting for the price to decline, and it is safe to predict that the English trade route will in the end become a continuation of the Russian highway from Resht to Teheran, and then be completed to the Gulf, in accordance with the original plans of the English engineers.

Indeed, it seems reasonable enough to doubt if the Imperial Bank itself, which started with

STATION AND POST ROAD
On the Transcaucasian Railway, at Poni

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remarked, afterward, that this was only one of Russia's manifold ways. It is thus, peacefully, blandly, but relentlessly and with the Biblical "wisdom of the serpent," by skilful utilization of the native elements, as well as by the introduction of new forces, that a Russian leaven is being distributed throughout the entire Persian loaf. The murmuring of the vanquished in the countries the Russian has overcome is never wholly stilled; the prophecy of revolt is continuous, but the Cossack is a sedative of wondrous efficacy. The Russian knows the peoples he holds sway over, and manages them as no other can, for their blood is in him. His hand is heavy on the recalcitrant, his largess and his trade are always in the van of his progress, and his transportation systems are crowded forward with a swiftness that makes the rest of the world wonder. He conciliates native agencies at every step of the way. There are Mohammedans and Armenians serving in his border regiments. He wants Geok Tepe to be forgotten. He is mindful of the admonition of Paul I.; he "remembers that he is only at war with the English, and is the friend of all who do not

RUSSIA'S ADVANCE ON INDIA

The crescent-shaped cordon which Russia has so long been establishing around India has been materially extended, both on east and west. Within the past three years—since the Russians guaranteed the Persian loan—Muscovite control has advanced from the Caspian to the Arabian Sea. Persia is heavily mortgaged, and, by virtue of concessions made under these obligations, the Russian engineers have about completed surveys for a net-work of railways throughout the northern and western part of the Shah's kingdom, connecting all Russia, all Siberia and the Pacific coast with both the head and the foot of the Persian Gulf, and with the railroads soon to be constructed eastward out of Asia Minor. The Russian outpost in the Afghanistan direction is within a day's journey of Herat. Troops and munitions of war are there. "The key of India" may be seized by Russia when she will. On the eastern end of the crescent, in China and Corea, Russian demands for territory or special rights grow too rapidly to be kept track of.

give them help." The Chinese episode is eloquent upon that score. He "assures men of the friendship of Russia." He annihilates memories; he weans peoples from regrets. He plays upon their vanity until it is transmuted into loyalty; he grafts upon his already conglomerate speech something of the language of the conquered, and the next generation speaks with the tongue of Moscow. In brief, he finds a barbarian, and moving on in the prosecution of his eternal purpose, leaves a Russian. That is what he has been doing in Caucasia and Transcaucasia, as well as on the far side of the Caspian, and that, reasonably assuming that England will not interfere strongly to block his progress to the South, is what he will ultimately do in all of Persia; what that will mean, in the struggle which is bound to come some day, the map shows. The Russian believes in his mission. He is unsparing, not always eloquent of the spirit of Peace Congresses, but his engines of war are bound to become the instruments of a cleaner and more progressive civilization, in Persia, at least, when the primary purpose of conquest shall have been served. That he aspires to the possession of all Asia there seems no longer any room for doubt. There are great obstacles in his path; he removes them. He has one way in Manchuria, another in Iran. But he is building warships as fast as he is taking up land in Asia. He anchors them now in Port Arthur; next in Bushire and Bender Abbas. How soon will the searchlights of his cruisers sweep the harbors of Calcutta and Bombay?

ACTUAL RURAL INDEPENDENCE

A TYPICAL, WELL-ORGANIZED, SMALL FARM IN THE CENTRAL WEST, WHERE ELECTRICITY, MODERN MACHINERY AND GOOD MANAGEMENT HAVE WORKED PERHAPS THE GREATEST REVOLUTION SINCE THE DAYS OF ABRAHAM

BY

WALTER E. ANDREWS

TO show the modern organization of agriculture under the best conditions in a well-developed community in one of the central States, I take the actual instance of Mr. Russell. Mr. Russell is a farmer who owns eighty acres of land and makes a specialty of dairying and fruit raising. Of course he hires a man and his wife by the year; gives them a neat, separate tenant-house, and pays them $300 a year in cash for their services. An electric car line runs past the farm to a good market town, about four miles away. A creamery and canning factory is reached by this same trolley route.

At five o'clock in the morning, whir-r, whir-r goes an automatic electric alarm in the tenant house. The hired man gets up and hurries to the big barn. He feeds and grooms the cows and cleans out the stalls. Then the proprietor arrives in time to help at the milking. Both men wash their hands and put on clean white duck suits used only when they milk.

The milk goes to a neat milk-room adjoining the barn and is fed into a centrifugal cream separator operated by electric power derived from the trolley line. A touch on a lever and the little motor hums merrily. Almost before you know it the separator has whirled all the cream out of the fresh milk into the shipping cans; while the skim milk — still warm and appetizing — is ready for feeding to calves and pigs.

The filled cream cans are hooked to a wire carrier, which spins them, by force of gravity, direct to the trolley platform on the road. In a few minutes a trolley car comes along, with a freight car attached, stops at the platform, takes the cans on board, and then whirls away with them to the creamery. The freight charges are but a few cents (which are collected weekly) and the empty cans are returned later in the day free of charge. Mr. Russell is credited by the creamery with so much cream and on settlement day he receives a check in payment.

Thus the milking is done and the cream is on its way to market before Mrs. Russell is out of bed. She does not have to bother with "setting" the milk in pans, or with ripening or churning the cream. She is no longer a slave to milk-pans and churns; and the old unsatisfactory way of "trading out" the butter at a local grocery store is done away with entirely. Butter or cream now means cash.

The cows, instead of picking a poor living from uncertain pastures, are stabled in clean stalls, cool in summer, warm in winter, and always well ventilated. Instead of "guess-work feeding," they are given a scientific ration exactly adapted to their needs.

A windmill, a tubular well, and a tank supplies pure water for barn, house, lawn and milk-room. The windmill has an automatic governor which stops or starts pumping according to the needs of the big storage tank. There is fresh water before each cow constantly, regulated by an automatic watering device. The stable floor is of cement, and is flushed clean with the hose twice a day. The stable walls glisten with whitewash, and everything is as neat and clean as it once was dirty and untidy. Dairying is now a science.

The cows are fed various grains and large quantities of ensilage—the latter from a big round silo holding 200 or more tons of succulent, preserved corn-fodder. Corn is planted and fertilized with the aid of special machinery, worked with a "riding" cultivator, and cut by horse-power. Not a single clip from an old-fashioned hoe is required, and the operator rides comfortably at his work with a sun-awning rigged up over his head. One man and team can now do the work of many men, and do it better. The man with the hoe has become the man with the horses.

And it is much the same with fruit or other farm products. The ground is plowed with a sulky plow, or torn to pieces with a sharp disc harrow. Whether plowing or harrowing, the operator rides or walks as he chooses; machine and team do the work.

The trees are systematically sprayed by a system of compressed air operated by power obtained from a wagon's moving wheels. One man drives the team, and two other men hold the nozzles and send the fine spray exactly where needed. The proportions and ingredients of the various spraying mixtures have been exactly determined by scientific experiment. Injurious insects and fungus diseases are thus combated rapidly and successfully.

When the fruit is ready to market it is taken to Mr. Russell's packing-house, and there "sorted" by an ingenious machine grader into three or four grades or sizes. After being carefully packed, the various grades are stenciled for shipment. Toward night a trolley-car takes the day's gathering direct to its destination—canning factory, steamboat dock, or commission man. Checks for sales come back promptly by mail.

There is a telephone in the barn and in both houses, connecting the farm with town and neighbors. Mr. Russell, like any other merchant, has an "office" of his own at his place of business—the farm. He takes one or two daily newspapers, which reach him promptly by rural mail carrier, and he keeps constantly informed on market conditions. Every day he telephones to his commission man, or to private customers, or to the canning factory, and he makes definite arrangements about shipments and sales. Each day's business is regulated according to the prevailing conditions; not a single consignment is sent off blindly. You will find no suspicion of "pig in a poke" about Mr. Russell's methods.

He keeps a simple set of books, and he knows at the end of each year just how he stands. He works hard, but not in the way his father worked. He directs the machinery, whereas his father was the machinery itself; he farms with brains instead of hands; he rides a good saddle-horse about his place, whereas his father was ridden by his work.

Now take a look into the snug farm-house, and what do you see? There are new books and magazines, pictures, and dainty furnishings. There is a piano in the parlor, and a bicycle or two on the back porch. Everything looks comfortable, cosy and attractive, without attempt at style or show. The chairs are intended to sit on, and the old hair-cloth sofa is now a genuine lounging place.

In winter the house is heated by a hot-water furnace in the cellar; and ventilation is insured by open fireplaces. In the kitchen there is a modern range; and in the cellar you will find a refrigerator. Electric lights are everywhere—in the house, on the porch, in the barn. The trolley line furnishes the current, of course. Thanks to windmill and tank, good water is on tap wherever needed—

hot or cold. And, if you fancy a bath, you will find the Russell bathroom as convenient as your own in the city.

The boys and girls of the family attend the high school in the town; the trolley line making a special school-rate of two cents for the round trip. Church and entertainments are liberally patronized, for modern farm life —thanks to the trolley—is no longer isolated.

Once each day (Sundays excepted), Uncle Sam's rural carrier brings the mail to the farm-house, and it is hoped he will soon bring in addition the latest government weather forecast. He sells stamps, money orders, and takes letters and packages for mailing. Often, too, he does little errands for people who care to pay for the favor.

Do the boys and girls leave this sort of farm? No! They compare their home comforts, and their parents' successful, peaceful life, with what they see in the town, and are contented.

To sum up, Mr. Russell is the most independent man in the world. He has really achieved the independence that has so long been talked about in connection with farming.

JAMES J. HILL

THE DEVELOPMENT AND THE CHARACTERISTICS OF THE MAN WHO WORKED OUT THE TRANSPORTATION PROBLEMS OF THE NORTHWEST—THE SIGNIFICANCE AND INTEREST OF HIS TRANSCONTINENTAL STEAMSHIP AND RAILROAD SYSTEM

BY

MARY C. BLOSSOM

FORTY-FIVE years ago there went into the great new country of Minnesota a young Scotch-Irish farmer from Canada. He was the sixteenth of his name in direct line of descent, hardy and alert. At the age of eighteen in the straggling village of St. Paul he became check-clerk and caretaker of freight at the steamboat landing.

At that time there was not a mile of railroad in the state or to the west of it. There was a traffic in fur carried on under the most primitive conditions. The Hudson's Bay Trading Company had for many years been the source of a large and important carrying trade from the northwest territories of British America. The year's catch of peltries was collected at the company's trading post, Fort Garry, now Winnipeg, and was sent in carts when the spring came to St. Paul.

In 1862 the first ten miles of railroad in the state were finished with great effort. It ran from the levee in St. Paul to the riverside in St. Anthony, and was known as the St. Paul and Pacific Railroad, of which Mr. Hill later became the agent. It was then that he noticed that a poor quality of wood for fuel was brought into town. He made a contract with the railroad to haul the better wood that he cut; and he thus founded the Northwestern Fuel Company, which still exists.

After the civil war the railway crawled northward and westward, and the trail of the Red River carts became shortened more and more. Mr. Hill clearly discerned the great resources and possibilities of the Red River country—Western Minnesota and Eastern Dakota. The necessity of a steamboat line on the Red River of the North became apparent—no sooner planned than executed. Mr. Hill came East, contracted for his boilers and machinery, and on the bank of the river built his flat-bottomed steamer called "The Selkirk," which in the summer of 1870 began to run between Winnipeg and the head of navigation. Soon the rival line operated by the Hudson's Bay Company saw its advantage in a consolidation.

There is no record of an enterprise of Mr. Hill's in which he has not succeeded. In his enterprises, of course, he uses the same agents that others use, but with a sense of proportion and with a concentration of utility that makes his power reach twice as far and accomplish twice as much as most other men. The "Selkirk," and a line of stages connected

with it, formed the first regular means of communication between Winnipeg and the outer world. The same year, 1872, Mr. Hill consolidated his transportation interests with those of the Hudson's Bay Company, forming the Red River Transportation Company. The St. Paul and Pacific Railroad now reached the western boundary of the state at Breckenridge.

While Mr. Hill was managing this Red River Steamboat service, his frequent trips between St. Paul and Winnipeg were not all taken by boat. Sometimes they were made in the dead of winter over the snow. He would take a sled, four or five dogs, food for the dogs, and pemmican for himself, and travel for days, sleeping like the Esquimaux among his dogs at night. Once he journeyed eighty miles in one day. Once, too, when traveling in another way, he had a burly Frenchman as companion, and by some means this man dislocated his shoulder and suffered great pain. Mr. Hill tied him to the wheel of the cart, and by an ingenious contrivance forced the shoulder into its place, and the man pursued his journey in comparative comfort. In these years of hard work Mr. Hill grew rich in observation and experience and fertile in resource; he learned the Northwest country to its heart, and dreamed of a great transportation line that should open its wealth to the world.

He became possessed by this idea; on the street, at the club, wherever he met men, he buttonholed them and talked of a great road and of the possibilities of the Northwest, until even his friends were worn out with hearing. It is told of him at this period, that while watching for several nights by the sick bed of a friend, he would look into the fire, sing Scotch songs and tell Scotch stories, reverting ever and again to his beloved project, and talking into the night oblivious of time, until he was sent home leaving his friends with doubts of his entire sanity.

For several years the St. Paul and Pacific system of railroads, consisting of 437 miles of completed track, was in bad condition. It was mortgaged, the roadbed was not good, the time was one of great depression in the financial world, the stockholders, mostly Holland capitalists, were weary with delay and misfortune. Because of his faith in the future of the region that he knew so well, Mr. Hill formed a syndicate of five persons which soon gained possession of the road, and in June, 1879, the system was consolidated into a single ownership as the St. Paul, Minnesota & Manitoba Railroad Company. The task was not an easy one; the untiring industry and foresight of the moving spirit were taxed to the utmost. At a time when he was striving to complete a certain piece of road in order not to lose the land grant, he worked night and day, personally supervising the construction, laying the ties under most adverse conditions, and getting the water out of the way as best he could. The service of a friend who labored with him unceasingly in this hour of need has never been forgotten. To crown their efforts the road was completed two days before the appointed time.

Later it was extended to the Pacific coast, traversing vast tracts of land without human habitation. The track was well laid but the stations were often only freight cars, remote from one another, and remote from other human settlements. Dismal predictions were made, but not for a moment did the unflinching courage and purpose of the leader waver. The Cascade Mountains were rich in lumber of a growth so large as to be useful for purposes not previously possible for single trees. Some of the trees had gained four to five hundred rings, proving them to have been large when Columbus discovered America. Coal fields were discovered, and a branch road carried their product for the use of the main line. Settlements were formed for preparing the lumber for shipment; and Mr. Hill was all along the line, giving words of practical advice to newcomers, telling them the kind of stock that they ought to keep, and how to get it, and what to feed it, and giving them many other bits of practical assistance. While the work was going on through this region, Mr. Hill rode over the rough mountain roads on horseback, deciding problems of tunnels and the like. He knows the cost of a bridge as well as his engineers, and more than once he has torn up specifications and saved money by using his own plans. One reason why the road has held its own while others failed, is that before putting it into operation he spent $5,000,000 in grading. It was Mr. Hill who taught the workers in the lumber country to alternate the thick and thin ends of the shingle so as to make flat, square packages, and thus economize space in the cars. He is sometimes called exacting with the employees

of the road. It is because the work must be done the best way; and, when a division superintendent is not packing his freight to the best advantage, he is not retained because he is a nice old man, but his place is taken by a man who can load cars well. In some cases it may not seem sufficient consideration of the individual, but great forces often do not consider individuals.

There is nothing that Mr. Hill feels more keenly than his responsibility to his stockholders. Before the panic of 1893, $30,000,000 had been provided by Mr. Hill for the road; and when the financial crash came, as this money was not in use, Mr. Hill lent it to relieve the strain, saved many men from ruin, and helped to preserve confidence. There are two old ladies in New Hampshire who had put $10,000 into the Manitoba road; and to this day Mr. Hill says to the stockholders at the meetings: "We still keep faith with the old ladies." The confidence felt in him by European investors is profound. He and Lord Roberts are close friends, and all of Lord Roberts' possessions beside his campbed and his uniform and his recent grants by Parliament are invested in the Great Northern railroad.

The first year the road was in operation, 1890, trade was paralyzed, the competition was great, and the country along the route was yet unsettled; but the mind which had planned the great enterprise had provided for its success. The officers of the road offered to have their salaries cut down, Mr. Hill receiving none; and reductions were made, ranging from large sums down to ten cents a day from some of the employees. When 10,000 men receive ten cents less a day the saving amounts to a considerable sum.

To ship valuable lumber eastward was an excellent plan; but to send empty cars after it was out of the question; so Mr. Hill conceived the idea of shipping grain for the Japanese steamers to carry to the Orient. An agent was sent to China and Japan to find out what the cost of wheat must be to compete with rice, and the result was that the Japanese Navigation Company, the third largest steamship company in the world, began to carry large shipments of grain to China and Japan. This was a foresighted piece of work surely. These boats were soon found to be inadequate for the shipment of the grain, lumber, cotton, steel rails, tobacco and silver which soon became a part of our exports to the Orient. Two large new steamers are therefore now in process of construction at New London for the Oriental trade. They each carry 20,000 tons of freight, and draw thirty-six feet of water. They are 680 feet long, 75 feet wide, and their height to the top of the bridge is as great as a six story building.

The question of docks for these large steamers was the next that came up. Seattle, the western terminus of the road, is built on the side of a hill, which continues to slope very gradually under the water. Moreover, there is in the water a very destructive mollusk called the teredo or shipworm, which burrows into wood and soon destroys every kind of timber. The fertile brain of Mr. Hill met this difficulty also. He caused thousands of tons of brush which the teredo cannot penetrate, to be carried and dumped into the water in two sections, leaving a channel between. Then the channel was found not to be deep enough; so out of this a huge hydraulic pump removed the mud and gravel and forced them into the brush, making quite a compact mass. Then creosoted piles, prepared by a very expensive process, were found to be impervious to the dreaded teredo, and were driven outside the brush and gravel. In this way a depth of forty-six feet of water has been provided for the great steamers when they shall begin their work.

The original 437 miles of completed road of which Mr. Hill took charge as manager, now number as the Great Northern System, 6,000 miles. In 1883 he became president of the company. While other trans-continental roads have collapsed and gone into the hands of receivers, the Great Northern has never once defaulted the interest on its bonds or passed a dividend. The road extends from Puget Sound to St. Paul, or during the season of navigation to Duluth and Superior, where it connects for Buffalo with its own two most luxurious steamers. A fleet of six freight vessels are added to these. The grain ships moving through the "Soo" give that canal rank over the Suez in point of tonnage.

In developing this great scheme of his life, the plan has increased enormously in the process. Besides laying the foundation of a great fortune, it has in its fulfilment opened a very rich and vast new country, reached out to new markets for many American products,

and brought benefit to great numbers of people. All along the line of his road he has encouraged the most diversified and productive farming, and he has introduced new methods and labor-saving devices. He has placed 5,000 head of blooded stock in the hands of farmers at his own expense, and his own farm of 35,000 acres at Crookston, Minn., furnishes an illustration of model farming under the very best conditions. The North Oaks farm of 5,500 acres, about ten miles from St. Paul, is the scene of Mr. Hill's favorite recreation. There is a simple farmhouse there where his daughters go with one servant or none, and play at keeping house. There are seven lakes on this farm, and a number of buildings, stables, greenhouses, a perfectly appointed dairy, a bowling alley, a boathouse, and houses for the workmen. On an island on one of the lakes there is a herd of elk, and in another pasture Mr. Hill is preserving a large herd of buffalo, now becoming so very rare. He is devoted to his horses, and there is no detail of the care of his fine blooded stock with which he is not perfectly familiar.

Among other philanthropic results of his work Mr. Hill has formed a plan for assisting his employees to save money. Anyone, male or female, drawing a salary under $3,000 may in return for deposits of ten dollars or more obtain investment certificates upon which the interest is paid quarterly. By letting the interest remain the amount increases rapidly. If a man or a woman ceases to be an employee of the road, the full sum, principal and interest, is paid. One old section foreman has put in $1,200 during the short period in which this system has existed, and one girl who has just been married, drew out $2,000 as her portion saved from her employment as typewriter.

Mr. Hill has erected and endowed a group of six buildings called the St. Paul Seminary for educating Catholic young men for the priesthood, and he has contributed largely to Macalester and Hamline Colleges, of Presbyterian and Methodist origin. All along the line of his road churches and schools of all religious sects have found him a generous contributor.

He has built a magnificent residence in St. Paul, a monument of careful construction, in which he has a picture gallery full of good paintings of modern French masters. Nor is painting the only branch of art which has engaged Mr. Hill's attention. He knows much about carvings, rugs, jewels and china. In politics Mr. Hill is a Democrat.

Although he has no desire to control a newspaper, he came into the ownership of the St. Paul *Globe;* but last year he declined to have his newspaper adopt the Bryan policy. He is liberal and broad-minded in his estimate of woman's work. "If a woman finds herself fitted to do a certain kind of work as well as a man, I don't see," he says, "why a man should call it his work." He himself feels that he owes much of his success to his beautiful domestic relations, because, as he quaintly expresses it, "there was never a fire in the rear." At the dedication of St. Paul's Seminary, Mr. Hill said in his presentation speech:

> "Some of you may wonder why I, who am not a member of your church, should have undertaken the building and endowment of a Roman Catholic Theological Seminary, and you will pardon me if I tell you plainly why. For nearly thirty years I have lived in a Roman Catholic household, and daily I had before me and around me the earnest devotion, watchful care and Christian example of a Roman Catholic wife, of whom it may be said, 'Blessed are the pure in heart for they shall see God,' and on whose behalf to-night I desire to present and turn over to the illustrious Archbishop of this diocese, the Seminary and its endowment as provided in the deed and articles of trust covering the same."

Mr. Hill is often spoken of as a puzzle. Like other elemental forces he is not easily understood. He is a figure of world-wide reputation and a man of remarkable intellectual endowment, of a great constructive genius, of a marvelous capacity for detail, inventive and of untiring industry; and behind all his qualities is the force of an indomitable will. For years he has been the embodiment of one great idea.

He may discharge an employee who has served him fifteen years, with no word of explanation and apparently with no effort to adjust the fault, whatever it may be—because that man causes friction in his vast machine. Yet he will care for and speak in the tenderest way of an unhappy little dog that has fled to him for protection. He will give a large sum of money to save a friend in danger of financial disaster; he puts his mighty hand on the political machine and without an instant's de-

MR. HILL'S RESIDENCE IN ST. PAUL

lay retains for a fellow-citizen of integrity the office he has filled well: he expresses civic pride in many ways. As the head and energy of the great industry that he has built up and with his touch on every part of it, he looks upon every man in its employ as an instrument that does or does not do its work. H is capable of being touched and influenced

DOCKS AT SMITH'S COVE, SEATTLE

The finest docks on the coast, built primarily for the Japanese and Oriental trade

IN THE CASCADE TUNNEL BEFORE COMPLETION
Showing the upper gallery of the drilling

by a spiritual personality like that of the beautiful old priest whose portrait stands in his library; and he can feel contempt for the less powerful than those who are on his own plane. A warm sympathy for old friends comes to the surface in his nature; he takes up the roll of his old militia comrades and recounts each name without faltering.

"Some months ago," the assistant manager of another railroad company recently said, "I went over to the Great Northern offices. Mr. Hill's outside office was half full of waiting visitors. I was admitted at once.

"Mr. Hill was in a genial mood. He made me sit down, and we talked of many things—of early experiences, of traffic in general, of Chinese trade, of the ship subsidy bill. That is, Mr. Hill talked of these things with his hand on my arm. I listened and watched the clock. At last he abruptly stopped; I went out—an hour and a half too late for my next engagement. The outside office was now full of waiting visitors. Three general managers glared at me for my presumptuous delay, but they should have remembered that Mr. Hill is not always taciturn."

Some months ago Mr. Hill visited the office of a railroad in the stock of which he had just obtained an influential interest. Glancing through the doorway of one large office-room, he asked curtly, "How many men here?" "About eighty-five," was the answer. "Can't you get along with less?" "No, we never could." "Well, I'll get a man who can."

On the other hand, Mr. Hill has displayed the greatest consideration towards certain of the old employees who were personal friends of his at an early day. A superintendent, one of the pioneer railroaders of Minnesota, was retained on full pay long after his physical condition incapacitated him for effective service. An assistant was provided to relieve him of actual responsibility, and when he died,

leaving his family with little property, Mr. Hill gave the widow $10,000 to maintain herself and children. So secretly was this good deed performed that it did not become known till long afterwards. The unvarying desire to remember and aid the friends of his less prosperous days is characteristic of Mr. Hill. Several years ago, for example, a pioneer jobber of St. Paul failed. He was old, he had a dependent family, he was practically destitute. But he had given Mr. Hill a clerkship in a time long past, and Mr. Hill advanced to his old employer the means, not merely to sustain himself and family, but to travel in search of health. This generous provision was maintained until the old man died and his family provided for.

The widow of another early friend applied to Mr. Hill for a small loan. She said she was going to open a boarding-house. "Sorry, Mrs. X, but can't let you have it. But you'd better get your boarding-house started." "Why, Mr. Hill, how can I? I have no money." "Don't need money." "Why, surely, I must pay for the furniture." "No, you mustn't; get a good house, get a bill for six months' rent, furnish the house, send bills to me. I'll pay 'em—sorry can't let you have any money. Good-morning, Mrs. X."

At another time Mr. Hill was walking down Third street, once a flourishing thoroughfare, but now deserted by the general public. He stepped into a little tobacco shop kept by a German who had known him in the village days of 1860. "Hello, Joe," exclaimed the railroad president, "how's business?" "Bat, ferry bat. I haf der chop, but vere is der beeples?" Mr. Hill glanced over the shop. There was no assistant tobacconist whose discharge could be recommended. But Mr. Hill asked for a blank check, and the following week the old tobacconist was besieged by "beeples" in a modern well-stocked shop on the principal retail thoroughfare.

SOME OF MR. HILL'S BUFFALOES

THE SOLUTION OF THE CUBAN PROBLEM

AN AUTHORITATIVE EXPLANATION OF OUR PROPOSITION TO THE CUBANS, BY THE AUTHOR OF IT — THE FAR-REACHING MEANING OF THIS SETTLEMENT — OUR OBLIGATION UNDER THE SPANISH TREATY AND OUR DUTY TO OURSELVES AND TO THE NEW GOVERNMENT

BY

SENATOR O. H. PLATT

CHAIRMAN OF THE SENATE COMMITTEE ON RELATIONS WITH CUBA

A QUITE important part of the world's work is now in progress in Cuba, and the United States is necessarily responsible for the wise and proper performance of that work. For three-quarters of a century our people have been deeply interested in the ultimate fate of Cuba. The Island is scarcely a hundred miles from our shores. It commands the Caribbean Sea, the Gulf of Mexico and the approach to our future inter-ocean canal. Large amounts of capital have been invested there by American citizens, and vastly larger amounts are waiting the assurance of protection before investment. Each country affords a natural market for the other. Cuba, then, by reason of its proximity, its strategic position and its political and economic features is more closely related to us than any other foreign country. That the United States would not permit any hostile or foreign power other than Spain to occupy the island has been frequently declared to be our settled policy. Its annexation by purchase has been several times suggested by Presidents and diplomatic representatives, and forcible annexation has been more than once hinted at. We have often narrowly escaped war on account of complications arising there. Self-defense and the integrity of our institutions alike give us a right to be heard now that a new government is being established.

Thoughtful and thoughtless men alike have anticipated that the time must come when Spain would be compelled to relinquish her authority in Cuba as she had in her other American possessions. That time has at last arrived, and the problem, still unsolved, of the relations which must exist between Cuba and the United States is the more intense, because it demands present settlement. The future welfare of both countries is directly involved, and only patriotic and high-minded purposes should be permitted to influence the people of either.

Two solutions only are possible. One, the annexation of the island by the United States; the other, the establishment of an independent republic there in which the vital and just interests, both of Cuba and the United States, shall be defined and maintained.

The project of annexation may, and ought to be, dismissed. It should not for a moment be considered, except in case of the direst necessity. The people of Cuba, by reason of race and characteristics, cannot be easily assimilated by us. In these respects they have little in common with us. Their presence in the American union, as a state, would be most disturbing, and we have already asserted, as the deliberate conclusion of Congress, that they ought to be free and independent. There is nothing to be gained, much, even honor, to be lost by the annexation of Cuba.

The real question, then, is, how can an independent republic be established there under conditions and circumstances which shall best subserve the interests of the people both of Cuba and of the United States? That our people have interests in Cuba which must be subserved and protected, goes without saying. We cannot, and will not, permit any European power, much less a hostile or unfriendly power, to acquire rights or privileges in Cuba to our disadvantage. The essence of the Monroe Doctrine asserted, and justly insisted upon for nearly eighty years, forbids it. Nor can

the United States permit the existence of a government in Cuba in which peace and order, the protection of life and property, and the maintenance of all international obligations are not observed. In respect to the future government of Cuba our interests and those of the Cuban people are identical; the government of Cuba must be stable, as well as republican, in form. Again, our obligations to the world at large, created and assumed by the act of intervention, demand of us that we become responsible both for the character and maintenance of the new government. If duty required us to see to it that Cuba was free, duty equally requires us to see to it that the Cuba of the future shall be both peaceful and prosperous. The "abhorrent conditions" existing in the island amply justified the intervention of the United States. President McKinley, in his message of April 11th, 1898, well outlined both the necessity and motive for intervention in these pregnant words:—

"The only hope of relief and repose from a condition which can no longer be endured is the enforced pacification of Cuba. In the name of humanity, in the name of civilization, in behalf of endangered American interests, which give us the right and duty to speak and to act, the war in Cuba must stop."

When, therefore, in the name of humanity, of civilization and of American interests, we intervened to put an end to misrule and intolerable government, we made ourselves responsible for the establishment and continuance of good government thereafter. More than this, we are bound by our treaty obligations with Spain to protect the life and property of Spaniards and Cubans who did not engage in the revolution. In the negotiations between Mr. Cambon, the French Ambassador, and Mr. Day, our Secretary of State, looking to the preliminary peace protocol, this was distinctly insisted upon. In a message of the Minister of State of Spain, dated August 7th, 1898, submitted by Mr. Cambon, this language appears:

"The necessity of withdrawing from the territory of Cuba being imperative, the nation assuming Spain's place must, as long as this territory shall not have fully reached the conditions required to take rank among other sovereign powers, provide for rules which will insure order and protect against all risks the Spanish residents, as well as the Cuban natives still loyal to the mother country."

This preliminary condition of peace was carried forward into the treaty of Paris in the first article of which it was stipulated:

"And, as the island is, upon its evacuation by Spain, to be occupied by the United States, the United States will, so long as such occupation shall last, assume and discharge the obligations that may under international law result from the fact of its occupation for the protection of life and property."

And in the sixteenth article it was further stipulated that the United States would

"upon the termination of such occupancy, advise the government established in the island to assume the same obligations."

We cannot, if we would, honorably relieve ourselves from our treaty obligation to see that the life and property of Spaniards and those Cubans who did not join in the revolution are protected by the new government. Perfunctory advice to that government will not meet the full measure of our obligation. Our work was only half done when Cuba was liberated from its oppressor. A nation which undertakes to put an end to bad government in a neighboring country must also see that just and good government follows. Nations have duties to perform as well as interests to guard and protect, a truth which it is encouraging to note is being better understood throughout the world now than ever before. From the high plane of duty alone, not less than by self interest, the United States is committed to the maintenance of good government in Cuba, and its policy must first of all be determined by this consideration. It cannot escape responsibility; it must meet it manfully.

The practical question as to how this end may be accomplished is not without its difficulties. Our responsibility for the government of the island and its people began with our military occupation. That the trust which we assumed has been wisely and justly administered to the present time can scarcely be questioned. We commenced our humane policy in Cuba when we furnished its starving people with food, restored them to their peaceful occupations and protected them in their individual rights. For two years and three months the people of Cuba have been more liberally, wisely and beneficently governed than ever before in their history, sensational newspaper criticisms to the contrary

notwithstanding. We have brought order out of chaos, tranquillity out of horror, happiness out of misery; we have stamped out pestilence, substituted education for ignorance, and grafted as rapidly as possible the spirit of American institutions upon an effete and corrupt civilization. We have done for Cuba what no nation on earth ever did for a conquered province.

During this period of military occupation and government we have constantly had one end only in view; namely, to afford the people of Cuba an opportunity to establish by themselves, and for themselves, an independent republic. It was impossible for them to do it without our guidance. Strange as it may seem, the fact that we have not attempted to dictate the features and provisions of their organic law is in some quarters criticised as a blunder on the part of General Wood. To have withdrawn from Cuba when Spain evacuated the island would have been shameful and disgraceful. We have therefore properly and wisely taken the steps necessary to enable the people to frame a constitution and establish a government thereunder. By the treaty of Paris, Spanish subjects were given twelve months in which to determine whether they were to retain or relinquish their allegiance to Spain. Until the end of that period it was impossible to determine who might rightly participate in the work of reconstruction. A census of the people was quite as necessary. Municipal elections, the establishment of municipal governments, and prescribing the right of suffrage were equally essential. All these steps, under the direction of the President, were taken, and then an election of delegates who should frame a constitution was ordered. The order for the holding of a constitutional convention very properly declared that the delegates in framing and adopting a constitution should, "as a part thereof, provide for and agree with the Government of the United States upon the relations to exist between that Government and the Government of Cuba."

In no other way was it possible that future relations between the two countries could be definitely agreed upon. That such agreement was necessary will not be questioned. Cuba was, and is to-day, a foreign power in the military occupation of the United States. It was not, is not yet, and will not be until its dependencies shall be properly recognized capable of making a treaty with the United States. Unless, then, the relations hereafter to subsist between its future government and the United States are defined in its Constitution, or in an ordinance attached thereto, which legally becomes "a part thereof," the whole matter of determining these relations must not only remain in abeyance until a new government has been established and recognized, but we must surrender any rights to be heard as to what these relations shall be. In other words, an agreement must now be had with the authorities framing the constitution, thus binding the future Cuba; or the United States, waiting until the independence of Cuba shall have been recognized, must take whatever Cuba is then willing to give by treaty, be it much or little, or be contented with nothing at all.

The convention met on the first Monday of last November and proceeded with the work of framing a constitution, which early in February had so far progressed that its character and general features were determined upon. There was in it no recognition of the United States, no expression of gratitude or even friendliness. As the convention neared the completion of its work it became apparent that a false pride on the part of a majority of its delegates was likely to induce them to ignore the requirement that they should as part of that constitution, by agreement with the government of the United States, provide for the relations to exist between Cuba and the United States. Great haste was manifested to complete the constitution so that it could be submitted to Congress before the close of its session without in any way considering the question of future relations. A majority of the delegates to the convention seemed to assume that nothing was to be done except to submit to Congress a constitution, ignoring the United States and any relations in future between the two countries, and that thereupon Congress would direct the withdrawal of our troops from the island, leaving all further stipulations to the Cubans themselves. To have acceded to this would have been fatal folly on the part of the United States.

A word here as to the constituency of the constitutional convention may not be inappropriate. Unfortunately the conservative element in Cuba is not largely represented in the convention. The most active, and, per-

haps, therefore, the most influential delegates, represent rather the revolutionary and reactionary element, and apparently are more anxious to obtain control of the new government than to establish it upon a basis which will insure lasting peace and prosperity in the island. In this emergency, the Cuban delegates showing little or no disposition to enter into any agreement or to formulate any statement of the relations which should exist between the two countries, it was felt to be the duty of Congress to advise the convention of conditions, a compliance with which our government deemed essential. Accordingly Congress, on the second day of March, by an amendment to the Army Appropriation bill, authorized the President to withdraw from the military occupation of Cuba

"so soon as a government shall have been established in said island under a constitution which, either as a part thereof or in an ordinance appended thereto, shall define the future relations of the United States with Cuba, substantially as follows:

I.

"That the government of Cuba shall never enter into any treaty or other compact with any foreign power or powers which will impair or tend to impair the independence of Cuba, nor in any manner authorize or permit any foreign power or powers to obtain by colonization or for military or naval purposes or otherwise, lodgment in or control over any portion of said island.

II.

"That said government shall not assume or contract any public debt, to pay the interest upon which, and to make reasonable sinking fund provision for the ultimate discharge of which, the ordinary revenues of the island, after defraying the current expenses of government shall be inadequate.

III.

"That the government of Cuba consents that the United States may exercise the right to intervene for the preservation of Cuban independence, the maintenance of a government adequate for the protection of life, property and individual liberty, and for discharging the obligations with respect to Cuba imposed by the treaty of Paris on the United States, now to be assumed and undertaken by the government of Cuba.

IV.

"That all acts of the United States in Cuba during its military occupancy thereof are ratified and validated, and all lawful rights acquired thereunder shall be maintained and protected.

V.

"That the government of Cuba will execute, and as far as necessary extend, the plans already devised or other plans to be mutually agreed upon, for the sanitation of the cities of the island, to the end that a recurrence of epidemic and infectious diseases may be prevented, thereby assuring protection to the people and commerce of Cuba, as well as to the commerce of the southern ports of the United States and the people residing therein.

VI.

"That the Isle of Pines shall be omitted from the proposed constitutional boundaries of Cuba, the title thereto being left to future adjustment by treaty.

VII.

"That to enable the United States to maintain the independence of Cuba, and to protect the people thereof, as well as for its own defense, the government of Cuba will sell or lease to the United States lands necessary for coaling or naval stations at certain specified points, to be agreed upon with the President of the United States.

VIII.

"That by way of further assurance the government of Cuba will embody the foregoing provisions in a permanent treaty with the United States."

Unless it be conceded that we have no right whatever to indicate the character of the government to be established in Cuba, or the relations which shall exist between the new government thereof and the United States, nothing could be more fair and just than the foregoing statement of conditions on which the President is authorized to withdraw from the military occupation of the island. The conditions thus proposed by Congress are as manifestly in the interest of Cuba as of the United States. The keynote of these propositions is that Cuba shall be and remain independent under a stable republican government which the United States will assist in maintaining against foreign aggression or domestic disorder. Cuba needs this, because it will be practically powerless either to repel foreign aggression or to maintain peace and order at home if the turbulence of the past shall reappear.

The new government of Cuba will have neither an army nor a navy. There are something like six hundred millions of dollars of Spanish bonds outstanding, for which the revenues of Cuba were pledged at the time of their issue. These bonds are held largely

in Germany and France. It is entirely probable that Cuba being left without any means of defense, these governments on behalf of their citizens would demand and endeavor to enforce their assumption. Cuba's only guarantee against this will be the fact that any nation attempting to compel it to pay this indebtedness will understand that it has the United States to deal with. Between revolutionists and Spaniards and Cubans who were loyal to Spain, there is little love. With no army to repress disorder, it is certainly within the limit of reasonable probability that the revolutionary and turbulent party may attempt the destruction or confiscation of Spanish and Cuban property which the new government would be utterly powerless to prevent. We most certainly owe a duty to our own citizens in Cuba that they shall be protected in the enjoyment of their property and kept free from the dangers which attend revolutionary uprisings. Indeed, any one who knows public sentiment in Cuba is aware that it is expected by Cuban people that if difficulty, either foreign or domestic, shall arise, the United States will be called upon to meet it. Even those who insist that nothing should be put into the constitution recognizing our right to do so, say that the United States will do it as a matter of course. Their strange attitude is that they will have a right to call the United States to their defense, but will not agree in advance that we may assert that right.

The United States needs this mutual arrangement because, for its own defense, it cannot permit any foreign power to dominate, control or obtain a foothold in this hemisphere or its adjacent territory, and cannot tolerate such revolutions or disorders upon an island so near our coast, as frequently occur in southern American republics; more than all, because it stands pledged in honor to its own citizens, to the citizens of Cuba, and to all the world to maintain quiet and peace and good government in Cuba. In a word, Cuba needs self-government, peace, tranquillity and prosperity. The United States asks for nothing more than this, but it recognizes its obligation and insists upon its right to see that such results are to be permanently secured.

The justice, fairness and wisdom of the conditions thus proposed do not seem to be questioned by any. A few persons only assert that in the joint resolution passed by Congress for intervention in Cuba, our government in some way pledged itself to make no requirement or suggestion respecting the establishment of a government by the people of Cuba. Such persons by some strange misapprehension also insist that the clause which has come to be known as the "Teller resolution," estopped the United States from having anything to say as to the relations which should exist between us and the new government; that although for three-quarters of a century conditions in Cuba had at various times imperilled our peace, and had always been an object of deepest solicitude, we deliberately pledged our honor that from the time we should drive out Spain we would surrender any right to say what the future government of Cuba should be, and committed all the vast interests of the United States in that island to the people of Cuba alone. The folly of such action on our part ought to be a sufficient answer to those who insist on such a construction.

To show, however, the utter fallacy of such a contention, it is necessary only to inquire what the so-called "Teller resolution" really is, and to consider for a moment the circumstances under which it was adopted. The fourth clause of the resolution of intervention is as follows:

> "That the United States hereby disclaims any disposition or intention to exercise sovereignty, jurisdiction or control over said island, except for the pacification thereof, and asserts its determination, when that is accomplished, to leave the government and control of the island to its people."

It should be remembered that we were then declaring war against Spain. We demanded in the second clause of the resolution

> "that the government of Spain at once relinquish its authority and government in the island of Cuba and withdraw its land and naval forces from Cuba and Cuban waters."

That our motive for the war upon which we were entering should not be misunderstood, either by Cuba or the nations of the world, we thought it proper and necessary to declare that we had no intention of acquiring the island of Cuba. It was an assertion merely that we would not exercise the right of a conqueror and reduce the island to our possession; that our motives were disinterested, and that the war was a war for humanity,

undertaken to put an end to abhorrent conditions near our shores, and not a war of conquest. No other construction can be justly placed upon the clause quoted. Our intervention was the assumption of a right, even at the cost of war, to put an end to intolerable government in Cuba; it was as clearly the assumption of a right to provide for a tolerable government there in the future. That we should assert in the same sentence our right and duty to put an end to abhorrent conditions in the island of Cuba, and also abandon our right to insist upon stability and peace thereafter, is inconceiveable.

We did agree that when "pacification" should be accomplished we would leave the government and control of the island to its people, but it requires a great stretch of imagination to say that "pacification" meant only peace with Spain, and that we were to withdraw from the island as soon as that was accomplished. If that narrow meaning is the correct one, we should have evacuated Cuba at the same time Spain did. If we rightfully remained there to secure the establishment of a government by the people of Cuba, we certainly have a right to insist that that government shall be one which will result in permanent pacification. A clear light is thrown upon the meaning of the word "pacification" when we recall the fact that the resolution of intervention was the result of a message to Congress by the President of the United States on the 11th of April, 1898, in which he said:

> "I ask Congress to authorize and empower the President to take measures to secure a full and final termination of hostilities between the Government of Spain and the people of Cuba, and to secure in the island the establishment of a stable government, capable of observing its international obligations, insuring peace and tranquillity and the security of its citizens as well as our own, and to use the military and naval forces of the United States as may be necessary for these purposes."

No one who reads the clause and considers the circumstances under which it was adopted, can for a moment with reason claim that its "pacification" meant only turning Spain out of the Island. If so, we should have left the government of the island then to the insurgents, a step which every right-minded person will say would have been a palpable violation of duty and honor. Manifestly pacification meant the securing of conditions in the island which would assure not only temporary but permanent peace under a stable government by the people. By every consideration, then, of our own interests, our own peace, as well as our responsibility to the people of Cuba and the nations of the world, we have the right to insist that, in the establishment of a government there, conditions shall be assented to, which will, so far as possible, secure a government which we can indorse, and, if necessary, defend.

Will it be contended for a moment that, if the Cuban convention should adopt a constitution which provided for a limited monarchy, we should be under obligations to turn over the island to such a government? And if it be admitted that we should not, does it not necessarily follow that we may exercise our own judgment as to the circumstances and conditions under which we will leave the island to the control of the people of Cuba?

The whole question may be summarized in a sentence. The United States of right may, and must, insist that before it will withdraw from the military occupation of Cuba there shall be a friendly government established there which will in case of necessity assist in the discharge of all international obligations and in protecting the life, liberty and property of all its inhabitants. To require less would be national folly and result in national disgrace.

It is unfortunate, to say the least, that any one should suppose that in requiring the relations between the two countries to be thus defined, we are in some sense interferring with the independence of Cuba. Assent to the propositions set forth can in no sense detract from or impair Cuban independence. An independent government is none the less independent because it enters into agreements by way of treaty, or by way of an ordinance attached to its constitution, with another government. We make treaties with many nations in which we assume obligations and concede rights, but we are none the less independent, and Cuba will not be less, but more surely independent than it could otherwise be, when it shall assent to terms by which its independence will be firmly secured. Self-government without the benefits naturally resulting therefrom, would be of little value. Cuba needs a real not a paper independence, and this the United States alone can assure her.

It is not easy to understand the reasoning of those who assert that we propose to limit or detract from the independence of Cuba, nor is it easy to understand the sensitiveness which seems to prevail among some of the members of the constitutional convention on this subject. The overtures of the United States are friendly overtures. President McKinley in his recent inaugural message, with his rare faculty for expressing a whole argument in a single sentence, accurately stated the situation: "With our neighbors we must remain close friends."

It is sad to reflect that sometimes peoples as well as men are inclined to turn their backs upon their best and truest friends. We have shown our friendship for Cuba in a most generous way. The lives of our brave young men have been freely sacrificed, an immense amount of treasure has been expended; we have relieved the starving reconcentrados; we have paid three millions of money to the Cuban soldiers; we have assumed the payment of all damages which our citizens sustained during the revolution, and we ask nothing in return but that there shall be an independent government established and permanently maintained in Cuba, a government which shall insure the continued pacification of that island. Surely we may ask the Cuban people if this generous exhibition of our friendship is not a guarantee that we desire to be their friends in the future.

What the immediate action of the Cubans will be is at the time that this is written uncertain, but it is scarcely conceivable that in the end the people of Cuba will reject the liberal and friendly proposals of the United States. We can wait. We shall wait, as we have done, in a spirit of friendship, in full confidence that eventually the better sentiment of the island will assert itself, and the world will see not only a free Cuba, but a peaceful and prosperous Cuba.

THE SECRETARY OF THE TREASURY

THE CHARACTER OF THE CHICAGO BANKER WHO HAS MADE SOUND MONEY MORE SOUND—THE AVERTING OF A FINANCIAL PANIC—NOT A STRICT PARTY MAN, BUT LOYAL TO THE ADMINISTRATION—ADVISER IN MORE THAN MERELY FINANCIAL MATTERS

A PANIC was threatened in Wall Street on December 18, 1899. The Secretary of the Treasury saw, about three o'clock in the afternoon, that matters had reached a crisis. He had not been in communication with Wall Street, nor had Wall Street appealed to him. But he had heard from some of the largest manufacturers that they were crowded with orders, and were unable to get money to tide over the interval between production and collections. The stringency in the money market was caused by the annual demand for currency to move the crops, aggravated by the action of the banks during the preceding twelve months in overloaning upon industrial securities.

The Secretary telephoned from Washington to New York to men in whom he had confidence and inquired as to the situation. The answer was that the situation was panicky. He was also informed that the clearing-house committee had about decided to issue certificates to supply currency.

The Secretary realized better than the bankers in New York that a panic would follow such an action. He went to see the President. He told him that he could avert disaster by a single move which would cost the government nothing. He proposed to announce next morning that internal revenue collections might all be deposited in the designated banks throughout the country instead of being sent directly to Washington. These deposits would amount to at least $30,000,000 in a very few days.

The President gave his consent and support. The Secretary called together the newspaper

correspondents, and the next morning every paper in the land made the announcement. The effects justified Mr. Gage's predictions. The New York clearing house found it unnecessary to issue certificates. More than three hundred banks in thirty-seven states received greatly increased deposits. What might have been a repetition of the panic of 1893 was thus avoided by the cool head and good judgment of the Secretary. Mr. Gage believes that panics can be almost indefinitely deferred by proper financial legislation.

Secretary Gage is the originator of the movement for civic reform which started in Chicago under his inspiration and is now a national influence. He wrote the platform of the Economic Conferences, a unique feature of Chicago's social organization, where Republican and Democrat, rich and poor, Conservative and Anarchist, meet for debate and exchange facts and theories. It is told of the first meeting of this kind organized by Mr. Gage that Tom Morgan, a labor agitator, was one of the principal speakers. After Mr. Gage had delivered a speech, Morgan arose and said: "Mr. Gage has spoken. He is six feet tall, a banker, well clothed and well fed. You will now hear from little Tommy Morgan, a runt, poorly clothed, and a factory hand since he was seven years old." It is said that Mr. Gage never so thoroughly enjoyed these meetings as when he succeeded in getting the real representatives of all classes of people upon their feet, perhaps even to antagonize his plans.

There is one thing which must always be borne in mind in estimating a Secretary of the Treasury. The position is necessarily one of comparative obscurity. His department never comes into the public eye unless it has done something to disturb conditions. One of the most satisfactory features of his administration to the Secretary himself is the fact that not once during that time has his department been instrumental in exciting the market of which Mr. Gage, though not a speculator, is a close student and a safe guide as to immediate future influences.

THE SECRETARY'S PLANS

The firmer establishment of the gold standard, a readjustment of the nation's debt upon a basis of lower interest rates, and an increased flexibility of the currency are the ambitions of the Secretary. He would have sound money made more sound by requiring the Treasury to give gold on demand for all silver money presented for exchange. He would make the silver dollar a metallic greenback differing from the paper article only in its intrinsic material value. He would provide further for the final retirement of all silver from circulation except for subsidiary coins. The Secretary takes a modest pride in refunding a large part of the national debt at a lower rate of interest. Through his efforts $446,000,000 in three, four, and five per cent bonds were converted into bonds bearing a lower rate of interest. The net saving to the government in interest alone upon this transaction was $11,000,000. To increase the flexibility of the currency he would retire government notes from circulation and expand the power of banks of issue. In the present system of loans and credits, he sees practically all that is necessary; but his desire now is to increase the possibilities of securing small cash loans. His theory is that the man who wishes to borrow $10,000 by checking it from the bank, the bank thus avoiding the necessity of hoarding more than its 25 per cent legal reserve, should have no advantage over the man who would borrow $10,000 in cash for immediate distribution. To accomplish this he would substitute a system of bank notes issued with assets as security, for the present system where all notes issued are secured by government bonds. In short, he would allow a banker to issue notes to the limit of his credit. To provide against any possible loss on these notes by the public, the Secretary is in favor of creating a general guarantee fund raised from taxation of all bank-note issues, out of which fund the notes of bankrupt concerns would be made good.

In eighteen months of Mr. Gage's administration, ending January 1, 1900, the most trying period experienced by the Treasury since the Civil War, the Treasury receipts were over $1,100,000,000. The Secretary points with pride to the fact that no accumulation of the people's money has been allowed, notwithstanding this inflow. He considers that the evils of accumulation may be greater than the evils of distribution — both must be intelligent to be beneficial.

His administration is characterized by intelligent temperateness. He follows no hard and fast lines, but is willing to be original if it is advisable. He realizes where aid is needed and gives it promptly. When he decided in November, 1899, to devote a part of the national surplus to the purchase of government bonds, he did not rush wildly into the market, but conducted what might have been made a sensational financial *coup* in a quiet businesslike manner. He estimated what certain bonds were worth according to interest earned, and announced that this price would be paid for all such bonds. This sale to the government was advantageous to those who had these securities, for there were no stamp taxes or other attendant expenses. The offer put more cash in circulation and steadied the market price of government securities. Such was the confidence, however, that less than $19,000,000 worth of bonds were offered for redemption.

FINANCIER, NOT POLITICIAN

Mr. Gage is not an active politician, in fact he has rather a contempt for professional politics. He performed excellent service in the last campaign, however, by rejoinders to attacks made upon the financial system of the administration. He is neither a high protectionist nor a free trader.

Personally, Mr. Gage is genial, accessible, and democratic. He has none of that hard-fisted uncharitableness generally associated with money getting. He is a kindly man, though stern with dishonesty. Many Democrats still hold important offices in his department which might have been filled by Republicans, had Mr. Gage so desired. With those who consult with him he has a patient, persistent way of making things absolutely clear. His wonderful faculty of illustration is noticeable from first acquaintance. He has a way of reducing great economic problems to simple examples of everyday life.

President McKinley sought a Secretary of the Treasury who not only represented the financial world, but one who could combine with his ideas of finance an understanding of equally important economic questions. In this mood he turned to Mr. Gage, then president of the First National Bank of Chicago, as the one man for the place. Mr. McKinley hesitated because Mr. Gage was not a strict party man. He communicated with personal friends of the banker in Chicago, Republican leaders, and found them enthusiastic, for they believed in the man.

When the position was offered to Mr. Gage he hesitated. He was president of one of the strongest banks in the country, with a salary of $25,000 a year. His influence in his home community was far reaching. By entering the Cabinet he practically retired from the business world. To be Secretary of the Treasury of the United States is an honor. To a man on the further side of sixty, with a modest competence assured, it was a satisfactory way of rounding out a busy life, especially as he saw in it a betterment of the public service. And Mr. Gage entered the Cabinet.

President McKinley leans strongly upon his Secretary of the Treasury. In questions of finance his advice would naturally be sought, but his ability, foresight, temperateness, and good common sense, with his power of grasping readily an entire situation, have made him an invaluable adviser to the President. In the affairs of Porto Rico, Cuba, and the Philippines, Mr. Gage has played an important part.

During Mr. Gage's occupancy of the Secretaryship there has been no opportunity for a great dramatic event such as the resumption of specie payments was in Mr. Sherman's time. But the chance has presented itself for service of hardly less real value; and he has so managed the larger problems as to take rank among the most efficient Secretaries. The whole weight of his influence has been felt towards the fullest establishment of the gold standard, so as to prevent the recurrence of a cheap-money crusade. He has done what he could to reduce the interest charges of the government; and he has worked towards a greater elasticity of the currency—all in a thorough, businesslike way. He is a good example of the well-trained man of affairs applying businesslike methods to a great public task.

LOOMS AT TAFTVILLE, CONNECTICUT
Operated by electric power transmitted four and one-half miles

WATER-FALLS AND THE WORK OF THE WORLD

HOW THE LONG DISTANCE TRANSMISSION OF POWER HAS REVOLUTIONIZED HUNDREDS OF INDUSTRIES AND MADE WATER POWER A SUBSTITUTE FOR COAL—SENDING ELECTRICITY OVER SNOW-CLAD MOUNTAINS—THE ELECTRICAL DEVELOPMENT OF AFRICA

BY

THEODORE WATERS

IF the wasted waterfalls in the world were to drive dynamos, their power would probably be sufficient for the mechanical needs of the whole world. We could do without gas and coal, and the smoke problem would be solved. Our houses would be heated and lighted and our cooking done by electricity. Farms could be cultivated with the same power, and electric railroads would become universal.

The recognition of these facts has started a veritable world-movement, and it is only a question of time when most waterfalls will be harnessed and electric power be transmitted in every direction. The influence of what has already been done on our scientific, industrial and political life, is great, and the ultimate extension of the uses of the waterfalls will have a profound, and at last, universal effect. The most remarkable examples of the way in which the sending of power over long distances may effect our social life are to be found in our western states, where the latest achievement is transmitting a current 150 miles across the Rocky Mountains.

The story of the first electric transmission plant and how it came to be installed is a simple statement, but it gives a key to all that has followed. A mine owner in Colorado was bemoaning the fact that he must presently go out of business because the cost of mining his low grade ore was greater than the profit from its sale. The mine was high up on a mountain spur, and the way to it was a zig-

A CANON FLUME
Through which water flows until it gains sufficient head

zag path. To operate a crusher, coal had to be packed up this zigzag path in bags on the backs of burros, and the cost of transporting it was $8.75 a ton. Sometimes the burros fell off the path into the gulch below, adding to the cost of the fuel and making a thickening line of whitening skeletons below. The mine owner had traveled abroad, and he remembered that at Tivoli, in Italy, there was an old, unused aqueduct, which had been built in the days of the Romans.

"Ah," he said to his chief engineer, "if I had that old aqueduct in this watershed I could make a fortune."

"Do you know," replied the chief engineer, "that there is a big waterfall on one of the upper spurs of these mountains?"

"Yes, but it is twenty miles away."

"Well," said the engineer, "if you should bottle it up and bring it here you would not have to go to Rome for your power. At least, you can make the fall run a dynamo and then transmit the current to the mine."

"PIPE LINES THAT WOUND LIKE SNAKES THROUGH THE MOUNTAIN PASSES"

LAYING A PIPE LINE

The mine owner went forth into the engineering world to see what could be done. He found that the idea had occurred to others, and that mighty preparations were making for a reclamation of the wasted water-powers of the silver districts. In the end he secured rights to the waterfall, and had parts

POWER-HOUSE, PIPE LINE, FLUME AND WASTE GATE
The water collected in a flume is conveyed through pipes to the power-house

of the water diverted into a wooden sluice-box or, aqueduct, which led to a water-wheel. The water operated the turbines, and the turbines were connected with dynamos. The dynamos generated a powerful electric current, which was made to flow through wires twenty miles across mountain-tops to the silver mine, where in its turn the current operated motors attached to the crushers. No more coal came up the zigzag path, and the mine became a highly profitable property in which electricity is used for lighting as well as for traction and crushing. Work goes on night and day, in winter as well as in summer. In the old days the winter was a season of idleness, because the burros could not get through the snowdrifts. The miners now pile the ore into great heaps all winter long in anticipation of the spring, when it can be packed down to the smelting works. And the cost of the power for operating this mine is now not even as much as the yearly repairs for the plant used to be. For the mine-owner rents a surplus power to other mine owners.

Starting in this way, it was not long before the greater number of mining districts were supplied with electric power emanating from distant waterfalls. Some of these waterfalls were found close to the mines; others were thirty or forty miles away. Some falls were found ill-fitted for the purpose and had to be adapted, as in the case of the Silverton mine, where a pipe-line, or flume, had to be constructed to carry the water several miles before a proper "head" could be obtained. And in still other cases where the water was scarce, especially in summer, artificial reservoirs were constructed to hold it and keep a "head" continuous enough to drive the turbines all the year around. Following these efforts of the individual mine owners men of capital went into the cañons, and harnessed the waterfalls and rented electric power to the districts around about, and sometimes the demand became great enough for several power-houses to occupy one cañon. In one instance, near Salt Lake City, power is generated by the cañon water, which passes down

A POWER-HOUSE IN THE MOUNTAINS NEAR SALT LAKE CITY
Pipe line is shown at right

to another power-house, and after operating this, down to a third. Great trenches were cut in the mountain sides, and pipe-lines as big as a city aqueduct began to be seen winding like snakes through the passes, and wires carrying currents passed up, some of them through the region of perpetual snow and down again to the level of residence, where the power was made to do all those things that are usually accompanied by engine throbbings and the dust and dirt of burning fuel. For, following the sudden great increase in the production of silver and the newly-acquired prosperity of the mountain districts, western cities began to ask themselves if they had not found the key to their manufacturing problems.

Sacramento is lighted and drives its trolley cars with current generated by the American River at Folsom, twenty miles away. This power being insufficient for the increased needs of the city, another water-power has been harnessed at Newcastle thirty miles away. The waters of San Antonio Cañon, California, generate 10,000 volts, which are transmitted overland sixteen miles to Pomona, in one direction, and twenty-eight miles to San Bernardino, in another. In the same way Snoqualmine Falls, Washington, send sixteen volts overland twenty-five miles to Seattle and thirty-five miles to Tacoma. Butte, Montana, utilizes the waters of the Big Hole River, which transmits 15,000 volts over the twenty miles of intervening space. Redlands, California, receives its electric light from an unpretentious station in Mill Creek Cañon, nine miles from the city. Salt Lake City, Utah, gets 10,000 volts from the waters of the Big Cottonwood, fourteen miles away, and when the multiplying trolley system became too heavy, the city went further and harnessed the waters of Ogden Cañon, thirty-five miles distant, and added 16,000 volts to the available supply; the town of Ogden taps the current en route.

So all over the West. Plants have been installed in Los Angeles, California; Riverside, California; Colorado Springs; Puray, Colorado; New Richmond, Wisconsin; and when the success of the movement was assured, it spread East and South. A mill owner at Taftville, Connecticut, where the looms were operated by an expensive 350 horse-power

Corliss engine, secured an option on an old ruined mill standing on the bank of the Shetugket, at Baltic, four and one-half miles down the river. The old water-wheel was still intact. It was connected with a dynamo, and now the looms in Taftville are operated by the mill in Baltic. The present location of the cotton mills at Columbia, South Carolina, is made possible only because electric transmission enables a distant water-power to be utilized. In Georgia, a countryman harnessed the waters of a creek which ran through his place, and with the aid of a dynamo lighted his house and outbuildings and operated his farm with electric power. Later he found that he had surplus power to rent to his neighbors. Then he took a contract for lighting a nearby village, and finally he went into the electric business on a large scale, and now he is president of a trolley company. The movement in the East has, of course, culminated in the most talked-of transmission of all—Niagara.

ERECTING A TRANSMISSION LINE THROUGH THE ROCKY MOUNTAINS

The city of schemes, made possible by the utility of the Niagara power, sent the movement rapidly abroad. Mexico had already established an eighteen-mile plant at Guadalajara, and a twenty-three-mile plant at Pachuca; and Canada was arranging to take 21,600 horse-power out of Lachine Rapids. But at Deptford, England, they built a plant to send 10,000 volts into London, and in Switzerland they got options on every waterfall in sight; and in the case of the River Suze they harnessed the waters to a transmission system that operates through twenty miles of mountainous country. They even use the current to haul cars to the top of the Jungfrau. In Italy, they utilize that old Roman aqueduct which the Rocky Mountain miner spoke of, and it is now sending electric light and power into Rome nineteen miles away. The Rhone sends 15,000 horse-power from Chevres to Geneva, and the Rhine yields 16,500 volts at Rhinefelden. In Norway, the waterfall known as the Sarpsfos operates a great aluminum factory. In Sweden, the inventor, DeLavel, secured control of most of the waterfalls, and, in Finland, they are making ready to use every available fall to send currents into the distant capital of Russia.

But we must come back to America if we would get a glimpse of the wide influence of this movement and realize the possibility of its future growth. The capacity of the Niagara plant is being doubled, and several of the California plants have been united into one great system. When the Niagara transmission line was built, it was thought that its chief office would be the supplying of electric light to Buffalo and the nearby towns. In a measure this was true, but the industrial phase of the installation is the more important, for around the Falls has grown a veritable city of schemes—a city of processes which depend more on the chemical action of the current than on its mere mechanical power. Many of these processes are possible only because the current and plenty of it cheaply produced is to be had for the asking. You might run a cotton mill with steam, for instance, but you could not produce carbor-

undum except in the electric furnace. Neither could you effect the electrolytic reduction of copper except by the use of large quantities of cheap current. And this principle follows in the production of certain bleaching powders, aluminum, and the hundred and one other things which are now produced at Niagara Falls.

In California the transmission systems have grown in extent until two plants exist each of which do service, approximately, 150 miles away, and the voltage has increased until 50,000 volts is no longer considered remarkable. Starting in the Blue Lake region of California, one of these lines will transmit 60,000 volts 152 miles overland to San Francisco and to Stockton, illuminating the Golden Gate city with current transmitted over a distance as great as the length of the state of New Jersey. The other plant, utilizing the waters of the Yuba River, will supply current to Oakland, 145 miles away, with tappings and offshoots at Sacramento and Nevada City on the way. The current will be about forty-five thousand volts. Each of these systems will supply current en route.

Consider Africa, from which Professor George Forbes, of England, has but just returned, after having made what might be called a continental long distance transmission survey. One result of Professor Forbes's visit will be the harnessing of Victoria Falls for the transmission of electric power to the mines of Mashonaland and Matabeleland, and an engineer named Shaw has calculated that enough power can be transmitted all the way to Buluwayo to run all the machinery in the gold mines for the next twenty years. This is the ground on which Lobengula held sway only a few years ago, and it is still as primitive as Yellowstone Park was fifty years ago. The Victoria Falls are part of the Zambesi, a river 1,600 miles long, draining one of the most fertile regions in the world, and full of rapids and falls capable altogether of multiplying many times the electric generating power of Victoria. How civilization in Africa can be quickened by the introduction of transmission systems! The power can be used in the depths of the wilderness with as much economy as in New York, London or Paris; the lines can be tapped at any point en route, and branch lines extended in any direction, for any distance; at the end of each branch line, even in the top of the highest mountain or in the middle of the densest swamp, thousands of horse-power will be available; the immense forests of Africa can be cut down with the most improved machinery, which under the old system could not well be removed from the heart of a manufacturing district; the mineral resources may be developed; the new towns and cities which will inevitably spring up around each of these industries will be lighted electrically, have trolley cars, and as many mechanical comforts as any New England village has now, and all quite irrespective of the price of coal. And most of the foregoing applies to every other uncivilized country in the world.

Man has always dreamed of doing great things, and has attempted in his puny way to accomplish them, only to find in the end that Nature has a better way, and waits to perform it gigantically as soon as her secrets are found out. The earth is after all a great machine, and during the century just passed man has found out how many of the interrelated parts may be made to work at his bidding. At some distant day perhaps we may come to understand every crank and cog and lever of the machine. It may be that by accident or design we shall hit upon the master lever which will set the whole machine working for us. Meantime, long-distance transmission may be regarded as one of the cogs.

OPERATING A TURN-TABLE BY A LONG-DISTANCE CURRENT

REMARKABLE LENGTHS OF WHEAT HEADS

BREEDING NEW WHEATS

THE INCREASED YIELD AND THE HARDIER QUALITY OF NEW VARIETIES, WHEREBY MILLIONS OF DOLLARS IN VALUE ARE ADDED TO THE GRAIN PRODUCT, AND THE CHANCE OF BAD CROPS DIMINISHED — A TRIUMPH OF SCIENCE IN AGRICULTURE

BY

W. S. HARWOOD

A TYPICAL SHOCK OF WHEAT

A REVOLUTION in the production of wheat is promised — the beginnings of it have in fact been achieved—by the successful experiments made during the last ten years at the Minnesota State Experiment Station, associated with the agricultural school of the University of Minnesota. The aim was to make new breeds of wheat. Both yield and quality are greatly increased.

The new wheats, which are the product of breeding and selection combined, have been tested for every purpose. They are not only larger in yield than the old wheats, and better able to withstand unfavorable weather and disease, but they are as rich in essential food qualities. During the summer of 1900 the experimental stage was passed and actual farm trials were made; for a farm trial is the ultimate test of a new wheat. Whatever favorable results may be shown in the experimental stages, the wheat must still stand the final practical test in the fields of the farmer. In the fields it has now proved its right to supplant the old, standard varieties. The concrete results are these: a toning up of the wheat harvest, not only of the region where the experiments are carried on, but of the entire wheat area of the world; the overthrowing of the argument of Sir W. Crooks, president of the British Association, that the supply of the

REMOVING THE POLLEN
To be transferred to another plant

wheat of the world would soon become inadequate for the needs of the world; a marked increase in the world's wealth, millions of dollars being added in a single season in only one section of the wheat-producing area of the world.

The work of wheat breeding began many years ago on the great Vilmorin estate in France. M. Henri Vilmorin, carried on extensive experiments in the creation of new breeds, more than a thousand new wheats having been tested by him. I shall not forget a trip to his farms at Verrières-le-Buisson, under the guidance of the present head of the house, M. Philippe Vilmorin. Ten years ago similar work was begun at the state institution in Minnesota, not only to create new breeds of wheat but to carry them forward through a series of years until enough wheat of a superior variety should be accumulated to enable the farmers to make the final test themselves. This work has been carried on at no expense to the farmer; for all the results are for the benefit of the public.

To create a new wheat the pollen from the flower of one wheat must be artificially transferred to the stigma of the flower of another

TRANSFERRING THE POLLEN
To the stigma of a wheat plant

wheat. Wheat is a self-fertilizing plant. Left to itself, it will reproduce itself throughout endless centuries. Great care is necessary in the work, and trained men are essential. As soon as the pollen is transferred—which is done about four o'clock in the morning at the hour when the wheat florets open—the head of wheat is encased in a tissue sack so that the work may not be interfered with by any pilfering insect or bird. Two of the best known varieties are selected, one for the father, the other for the mother of the new race. When the harvest comes it may be that the new wheat has some of the poor, and few of the good characteristics of the parents; or the reverse may be the case. It is impossible to say in advance what the new wheat will be.

From the single head which results as the

CUTTING AWAY THE FLORETS
And a head in tissue sack after pollenization

first harvest, only a handful of kernels is threshed out. This handful is of immense importance, for these kernels may become the source of a mighty race, destined not only to supplant the old wheats, but to add enormously to the wealth of the world. But the last results are slowly won; for the first harvest is very meagre, and the second and even the third are small. But after a number of years enough wheat can be garnered to sow the twentieth of an acre; and then come tangible results. To breed a new wheat requires infinite pains and patience. It has taken ten years to bring the new wheat varieties at the Minnesota Experiment Station to the farm test.

In the meantime hundreds of wheats have been proven valueless. Some were too heavy in the stalk, thus "lodging," as it is called, falling over in seasons of much moisture be-

HARVESTING NEW WHEAT WITH SHEARS

cause of a too rank growth; some were particularly susceptible to the diseases of wheat; some were poor in the color of the kernel, while still others were deficient in yield or lacking in essential food elements. A successful new wheat must not only yield a larger number of bushels per acre, the first and all-important requisite, but it

CREATING NEW BREEDS IN THE FIELDS

SHOWING THE STRENGTH OF A ROOT

must be hardy and it must be rich in food qualities.

From the hour of the creation of the new wheat in the gray of a summer morning, throughout its life, a careful record is kept of every event in its history, in a book which is the record of the wheat's life.

Selection plays an important part as well as breeding. At every step only the best wheat kernels and wheat stalks are preserved; defectives are rejected. No effort is spared to give the new wheat the best possible start in life. In some ways the selection may be considered more important than the breeding itself. During these experiments nearly five hundred wheats were thrown away as deficients. Out of the entire number bred, less than a dozen were retained. A number of those which were kept for future trials were especially prolific, registering as high as eight to ten bushels per acre above the old wheats planted alongside of them and receiving the same treatment.

In the spring of 1900, enough of one variety of the new wheat having accumulated to warrant field trials, a number of thrifty and intelligent farmers from various parts of Minnesota were selected, and to them enough seed was sent to give it a fair trial. Every farmer was supplied with an elaborate record-blank. If for any reason the new wheat should be given a better chance or a worse chance than the old, especial attention should be called to the fact. Some of the reports indicated by the abnormally large increase of the new wheat that the farmer had given it a better opportunity than the old wheat, even though he did not say so, and all such instances were thrown out as being unfair to the old wheat. Other farmers were as plainly unfair to the new wheat, and their data were rejected. Out of all the instances, about forty were selected as having complied with all the conditions.

The new wheat averaged almost four and one-half bushels per acre more than the Fife wheat, one of the old standard varieties, and almost one and one-half bushels more than the average of all the wheats with which it was compared. In some few instances the new wheat was below the old, and there may be some regions where a new wheat will have

WASHING OUT WHEAT ROOTS
And making drawings of them for record purposes

HARVESTING NEW WHEATS
In their earlier years

to be bred to meet the climatic and soil conditions; for it is now possible to make a wheat to order.

It seems fair to say that the increase of the new wheat over all old varieties will be at least two bushels per acre. In the three states of Minnesota, North Dakota and South Dakota, there are on an average about 15,000,000 acres of land planted to wheat. When the new wheat is in use over all this region, an increase of only two bushels per acre will make a crop at least 30,000,000 bushels larger than the old varieties would have yielded. At an average price of seventy-five cents per bushel, the increase in wealth in the region will be $22,500,000 a year.

The new wheat which has been grown under the direction of Professor Willet M. Hayes, of the Minnesota School of Agriculture, will be given a much wider field trial among the farmers this summer. Those who planted the wheat last season, have, in addition to their own seed supply, about 4,000 bushels to sell to other farmers, and the new wheat, it is expected, will have quite an appreciable effect upon the harvest of 1901.

The wheat known as Minnesota No. 163 has yielded as high as 42.7 bushels per acre, while none of the eight new wheats during the six years' trial has ever run behind 19.5 bushels. The average of each new wheat for a period of six consecutive years, from 1895 to 1900, inclusive, is in no case less than twenty-seven bushels per acre, while the average of all the averages of the new wheats is 28.1 bushels per acre. The general average of the standard varieties in the region on the farms is from thirteen to fifteen bushels per acre, so that, while making due allowance for superior farming at the station, the allowance of an increase of two bushels per acre when the new wheat passes into complete sway in the northwestern wheat fields, seems far too low. On a number of farms of the higher type it showed more than two bushels increase in last season's harvest.

The tabular statement subjoined shows in

PLANTING, ONE KERNEL AT A TIME

THRESHING OUT NEW WHEAT

In earlier years. An entire harvest is being poured into the sack from the pail

condensed form what the eight best wheats have accomplished at the station. Each of these is given a number rather than a name, prefaced by the word Minnesota. Some of the eight give promise of yielding better results than have been achieved by Minnesota No. 163, the wheat now under test by the farmers. In the table the first three wheats are the old, standard varieties. The table shows results for a period of six years.

YIELD OF VARIOUS WHEATS OVER A PERIOD OF YEARS.

Variety.	Minn. Number.	1895 Yield.	1896 Yield.	1897 Yield.	1898 Yield.	1899 Yield.	1900 Yield.	Average.
Haynes' Blue Stem	51	21.6	24.6	20.4	23.3	25.9	30.5	24.4
Powers' Fife	66	26.3	21.4	17.4	24.0	30.4	31.5	25.2
Bolton's B. S.	146	35.3	25.1	21.5	22.5	28.8	32.3	27.6
Minnesota Number	149	36.2	23.3	19.9	26.5	31.8	29.9	27.9
" "	155	32.3	23.3	20.8	26.8	32.0	29.0	27.4
" "	157	30.9	22.0	21.4	26.6	33.0	30.0	27.3
" "	163	42.7	23.0	19.9	25.0	30.3	34.3	29.2
" "	167	35.0	24.9	19.7	27.0	30.0	30.6	27.9
" "	169	37.8	25.0	24.3	26.3	28.8	30.9	28.8
" "	171	35.0	21.7	19.8	26.3	32.0	36.3	28.5
" "	181	34.5	22.2	19.5	26.5	25.6	39.6	28.0

It does not seem too much to say that science has here achieved a notable triumph; for it has not only given to the world additional safeguards to one of the most important industries known to the race, but it has added materially to the world's wealth.

TESTING NEW WHEATS

As to their food values

UNITED STATES CONSULATE AT FOOCHOW

OUR CONSULS AND OUR TRADE

HOW OUR REPRESENTATIVES ABROAD ARE REGARDED WITH ENVY BY OTHER NATIONS — A PROMPT SERVICE IN COLLECTING DATA FOR MANUFACTURERS AND EXPORTERS — PUBLICATION OF A GOVERNMENT "DAILY," THE ONLY ONE OF ITS KIND IN THE WORLD — MERITS AND DEFECTS OF OUR CONSULAR SYSTEM

BY

FREDERIC EMORY

CHIEF OF THE BUREAU OF FOREIGN COMMERCE, DEPARTMENT OF STATE

IN an article, "Our Growth as a World Power," in the WORLD'S WORK for November, the wonderful development in the export of American manufactures during the past few years was ascribed mainly to the inventive genius and mechanical skill of our people, which have enabled us to undersell even the more advanced industrial nations of Europe. It was pointed out that our progress in foreign markets is the more extraordinary because of the general lack, until very recently, of organized or intelligent effort by our manufacturers or by our exporters to cater to any but our own consumers. With most defective and inefficient methods, we have surprised ourselves and the world at large by suddenly emerging from our absorption in domestic trade as a potent factor of international commerce.

The same result has been reached in a branch of our Government machinery which a few years ago seemed but little likely to challenge the emulation of other countries, and is still the object of much well-meaning but ignorant criticism, not by foreigners, but by would-be reformers at home. For it is only lately that the consular service of the United States has come to be regarded by the best authorities abroad as the most efficient organization of its kind in the world for spreading the sale of goods, for stimulating home industry and enterprise, and for informing exporters as to trade conditions in every important market of the globe.

In view of the demand from various quarters for reforms in our consular system, this, doubtless, will be regarded as a surprising statement, but it is one that is abundantly borne out by the facts. It is the fashion to argue that, *because* the consular service is

THE CORNER TAKEN BY THE UNITED STATES CONSULATE, FRANKFORT-ON-THE-MAIN, GERMANY.

largely made up of men appointed for merely political or personal reasons, therefore its fruits must necessarily be bad. But it sometimes happens that a system confessedly faulty produces some good results; and paradoxical as it may seem, there are foreign experts who consider the frequent changes in our consular corps, which most of our reformers denounce as wholly pernicious, to be one of the reasons which explain the admittedly greater usefulness of American consuls in promoting trade.

COMPLAINTS OF THE BRITISH SERVICE

Six years ago the commercial world of Great Britain was beginning to take note of the practical character of the reports on commerce and industry by American consuls, and the promptness with which they were printed and distributed by the Department of State. The British Chambers of Commerce were called upon by the Executive Council to consider "the action taken by the Government of the United States and by other governments by means of special consular reports, in order to supply their traders with information up to date with regard to openings for business in foreign countries," and the opinion was expressed that the practical value of the reports of British consuls "would be much increased if they afforded more direct and early suggestions and details with respect to trade questions of present interest." The local chambers of commerce were, therefore, invited to make suggestions as to trade inquiries by consuls for submission to the Foreign Office. In the responses to this circular, a variety of changes were proposed for the improvement of the commercial work of the British consular service. At the meeting of the Bradford Chamber of Commerce, the statement was made that United States consuls "did a great deal more" for the extension of trade than British consuls did. The Cardiff chamber complained of the delay in printing the British consular reports. The Hull chamber thought the reports of British consuls should be given to the public as promptly as possible, "if necessary, even by telegraph." The Newport chamber replied to the effect that trained business men should be selected as consuls, and that it was desirable that the system of the United States Government in instructing its consular representatives "to report exhaustively upon trade and commerce, either in their isolated or general phases or developments," should be adopted.

THE CONSULATE AT CHUNGKING, CHINA.

THE DOORWAY OF CONSULATE, GUAYAQUIL, ECUADOR.

The British agitation of the subject continued, and about a year ago a commercial

OUR CONSUL AT COBURG, GERMANY.

intelligence branch of the Board of Trade (a government bureau) was established, and the organ of the board, the *Board of Trade Journal*, was converted from a monthly into a weekly periodical, in order that consular and other commercial reports of current interest might be given more promptly to the public.

This new departure is the more interesting because, for many years, the British system of consular reporting was regarded as a model, and even yet some of our reformers continue to assert that the British consuls are greatly superior to our own in their general efficiency in promoting trade. It is not intended here to institute comparisons, but simply to point out the fact that the British public does not share the view of our home critics, and is still inclined to take pattern by us.

GERMANY COPYING OUR METHODS

Germany, with her splendidly equipped commercial schools and admirable machinery for extending foreign trade, seems also to consider her facilities deficient by comparison with the American in the matter of procuring and promptly distributing commercial imformation, and has recently begun the publication, declaredly "after the mode of the United States Department of State," of special consular reports upon trade matters, products, economic questions, etc., prepared by German consuls in reply to interrogatories or specific instructions from the government.

Dr. Vosberg-Rekow, the head of the Central Bureau for preparing commercial treaties, in a recent book upon commercial treaties, in which he expresses the opinion that the United States is likely to be Germany's strongest rival in industrial competition, speaks of our consular officers in Europe as "inspectors of our exports and vigilant sentinels who spy out every trade opening or advantage and promptly report it." In another place he says:—

"The Americans have acted judiciously in establishing a system which is of the greatest advantage to themselves, but costly and inconvenient

WHERE THE STARS AND STRIPES WAVE OFFICIALLY AT CALCUTTA, INDIA.

to their competitors. In all countries with which it has trade relations, the United States has stationed consuls and consular agents. Every shipment of goods to a United States port must pass through the hands of these officials, and the amount, value, place of origin, market price ruling in the country of production, method of production, etc., are noted. The consuls thus dive deeply into the economic condition of their districts and obtain information the result of which is discernible in the steadily increasing exportations of their home country."

THE CONSULAR DAILY

While Great Britain and Germany have been striving to overtake us, by devising means to improve their commercial information from consular sources, the United States has taken a long step in advance. In December, 1897, the Chief of the Bureau of Foreign Commerce of the Department of State, which has charge of the publication of the consular reports, recommended to the Secretary of State that all reports of immediate value and importance should be published daily, instead of monthly, as before, for the convenience of the newspaper press, trade bodies, exporting firms, etc., in order that the information might be supplied to the public with the least delay.

The requisite authority was granted, and in January, 1898, the publication of daily consular reports was begun.

The experiment proved successful from the start. The newspapers were the first to appreciate the change. The news agencies and special correspondents in Washington had previously been compelled to extract what they could from the reports in manuscript as they were received at the Department. Not infrequently, correspondents were forced to wait until one of their number had finished with a particular report. At present, every correspondent receives a copy of the daily consular reports early on the day of issue. One can now scarcely ever pick up a newspaper without seeing quotations from these reports, or perhaps one or more reports in full.

BUSINESS INTERESTS AROUSED

The widespread publication of consular matter in the newspapers soon attracted the attention of business interests, and applications for the State Department "daily" began to pour in. A manufacturer or an exporter would note that intelligence had been received which affected his business, and would write to the Department at once for particulars. Correspondence with important firms all over the United States was thus opened up, and the business community gradually learned that the consular service could be relied upon to furnish information about

UNITED STATES CONSULATE BUILDING, ERZERUM, TURKEY IN ASIA.

every detail of foreign trade. Naturally, inquiries soon began to multiply for data as to this or that industry or process of manufacture unknown in this country; the demand for certain lines of goods; the kind of competition to be met, and the obstacles to be overcome. When these inquiries promise to elicit information of general value, the consuls are instructed to forward reports for publication. When, on the other hand, the inquiries relate only to minutiæ, the inquirer is referred to the consular officers, who obtain the desired information if they can, and forward it in duplicate to the Department. The Bureau of Foreign Commerce retains one of the copies for purposes of reference or use in the Consular Reports if the matter should develop points of practical value; the other copy is promptly transmitted to the inquirer. This feature of the commercial work of the consuls has already grown to large proportions; but it is little known outside the comparatively narrow range of the particular business concerns which have benefited by it.

SOME EXAMPLES OF BENEFIT TO TRADE

It is not to be expected that any consular officer can report exhaustively or with technical accuracy on the wide range of questions which are often submitted, involving details of scientific discoveries and processes which only an expert could properly handle, but it is surprising how successful the average consul has proved himself to be in obtaining substantially what is desired. A New York firm of exporters recently wrote the Department of State: —

UNITED STATES CONSULATE GENERAL, YOKOHAMA.

ENTRANCE TO THE CONSULATE AT ZANZIBAR.

"We take this opportunity of expressing to you our gratitude for the Consular Reports. We attribute our having nearly doubled our foreign trade during the last three years in great degree to the light we obtain from careful perusal of these reports."

The president of a company manufacturing hardware and tools at New Haven, Conn., writes: —

"Three years ago and over I took occasion to write to the different United States consuls in England and on the Continent of Europe, requesting the names of prominent hardware dealers and manufacturers. The replies were voluminous; we, therefore, sent to the addresses given, circulars, samples, etc., and the result is to-day from 30 per cent to 35 per cent of our entire product in certain lines of hardware we export."

Undoubtedly the activity of the consuls has been greatly stimulated by the prompter publication and wider distribution of their reports. Encouragement is also given by the frequent recognition of the value of their services by the business world, and by the

UNITED STATES CONSULATE AT ALEXANDRETTA, SYRIA.

estimation in which their commercial work is held by competing nations.

It is but due to the consular service to say that, generally speaking, it shows itself not only responsive to the instructions of the Department of State and the demands of business interests at home, but often volunteers information and advice which open up new fields of effort for our industries and trade. It is animated by an *esprit de corps* which springs not from a carefully elaborated system, but from the play of conditions, appealing to the individual judgment and patriotism of its members. Among the spontaneous efforts of consuls on behalf of our commerce may be mentioned the forwarding of samples of new products or of lines of merchandise especially suited to particular markets; the establishment of sample rooms at the consulates to exhibit American goods or of agencies for the sale of them; the promotion of better facilities of transportation, including direct steamship service.

These facts show that while reformers have been busy devising means of improving the consular service, the service has automatically improved itself. Undoubtedly, the agitation for consular reform fulfils a useful purpose in arousing public interest in the improvement of the service and in provoking discussion of alleged defects. It is more than likely that this particular reform has made so little progress, for the very reason that many of its advocates have shown themselves to be strangely misinformed.

BLIND TEACHERS OF REFORM

The secretary of one of our leading boards of trade during the sessions of the International Commercial Congress at Philadelphia, about a year ago, gravely made the point that our consular service lacked education and was therefore inferior to the services of other countries in procuring commercial information. He was greatly surprised on being told that whether our consuls lacked education or not, they were admitted by foreign governments to be without peers in this branch of their work. A professional reformer who is very much in evidence has asserted on two occasions (and was promptly brought to book for it) that we are at a great disadvantage in competing for trade because of the inefficiency of our consuls, and has descanted glowingly on the superiority of their foreign colleagues in the very line of work in which the Americans, as has been shown, are held by the best opinion abroad to excel. The same authority (he has been widely quoted) declares that "the grade of our commercial representation in foreign countries is below that of any civilized country," and that "there is no comparison between England's foreign commercial service and ours." Contrast with these sweeping assertions the criticisms by Englishmen of their consular system in its relation to trade and the testimony of practical business men in this country.

THE WEAK SPOT IN OUR CONSULAR SYSTEM

Among the practical business men who appeared before the Committee on Foreign Relations at the hearing in May last, there was one who put his finger on a weak spot which seems fully to justify the demand for legislative reform. "I have come to believe," he said, "that the lack in our consular service is owing more to the short tenure of office than to the quality of the material that is originally appointed, and any bill that will give opportunity for our consuls to perfect themselves in the requirements which all must gain when they take the field, will add to the efficiency of the service." Perhaps there would not be so much opposition to consular reform if it concentrated itself upon the effort to obtain greater stability of tenure and an equitable system of rewards for

meritorious service and to secure a much needed elasticity in permitting the transfer, at the option of the Department of State, of any consular officer from one post to another, as occasion required. It is but natural that the present incumbents and their friends should antagonize a movement which proposes to make their continuance in office depend upon a drastic scheme of examinations. No doubt, they would be much more placable, if assured that they were not to be rudely jostled or perhaps thrown out by the reform, so long as they continued to do satisfactory work.

How best to reconcile the views of those who regard competitive examinations as the only practicable means of eliminating objectionable elements with the undoubtedly valid requirement of personal fitness, especially in business training and experience, would seem to be a question to be settled only by some form of compromise. Might not the solution be found by attaching to the scheme of selection primarily by examination, the condition that only that candidate shall be chosen who is able to satisfy the Department of State that he possesses the requisite qualities?

THE LITERARY CONSUL

It is very doubtful whether the consular service would have accomplished the commercial work of the past few years which it has accomplished, had it been composed of mere *literati*. A large percentage of such a force might have consumed valuable time that has been expended in practical work for the everyday use of our manufacturers and exporters, in studying subjects of real utility and interest only to themselves or to a comparatively narrow circle of congenial spirits, or in perfecting themselves in social accomplishments. As cases in point, the fact may be mentioned, in no spirit of harshness, that two of our most accomplished literary men who held important consular posts some years ago were among the most difficult to extract commercial information from, and yet they have figured in the magazines as authoritative purveyors of advice as to how the consular service should be reformed in order to make it a satisfactory instrument of trade!

The truth is that the politician who is appointed to a consular post is usually something besides a mere party worker. As a rule, he is a newspaper man, a merchant, a manufacturer (even if it be only in a small way), who is more or less in touch with business affairs, and there are but few who rely upon politics exclusively as a means of support. And it must be admitted that even with the handicap of the "spoils" instinct, he sometimes does better work for our business men than would a carefully trained neophyte who has never rubbed about in practical life.

Undoubtedly, the movement which is rapidly gaining headway in our colleges for special courses to train young men for the diplomatic and consular services is a wholesome feature of the general tendency toward the adoption of more intelligent, more scientific, methods in our government service, and also in the development of our export trade. Training of this kind is an excellent specific for the evils complained of, but the experience of other countries proves that it is easy to take an overdose. By all means give us educated consuls; but may it not be found wiser to insist that they shall first have served an apprenticeship (such as most of the present consuls *have* served) in a newspaper office, a counting-house, a workshop, or a bank?

The same considerations do not apply to the diplomatic service, which is essentially a polite profession in which the greater the degree of intellectual and social training, the better the results. In this field, the special courses of colleges and the test of academic attainments can work no serious harm, but, on the contrary, should prove most helpful. The burden of all the demands of reform in the consular service is *greater efficiency in trade*, and how is this to be secured if not by making it a primary qualification of consular officers that they shall have a practical knowledge of and adaptability for the most important of the duties they are to discharge?

Upon the whole, may we not conclude that in so far as foreign commerce is concerned, we have in our consular service a relatively good thing, and that in seeking to make it better, we should be careful not to paralyze the individuality, the special energies, admired of other nations, which it has developed largely of and by itself?

A NERVE CENTRE OF VAST INDUSTRY

THE UTILIZATION OF THE WHOLE WATER-POWER OF LAKE SUPERIOR FOR A MULTITUDE OF ALLIED INDUSTRIES—A RAILROAD TO HUDSON'S BAY—THE ENERGY OF THE MAN WHO IS DEVELOPING A REGION OF IMPERIAL EXTENT

BY

DWIGHT E. WOODBRIDGE

ONE of the greatest industrial movements of the time is the rediscovery of water-power, and the new era in its use since the long-distance transmission of power has been made practicable. Mr. Francis H. Clergue, a young lawyer of Bangor, Maine, was among the first to realize the enormous possibilities of the new water-power. Seven years ago, having secured financial backing, he began a search for a location fitted for his purpose. He traveled westward, examining numerous falls and rapids, but found nothing satisfactory until he reached the Sault Sainte Marie. Its possibilities were apparent at a glance, he demonstrated the value of the property to his backers, the utilization of the power of Lake Superior was at once decided upon, and a company was organized.

The first canal, completed several years ago, is upon the Canadian side of the rapids, and is cut about half a mile through the sandstone rim of Lake Superior. It furnishes 20,000 horse-power, but when it was first offered for sale no one wanted it. The demand for cheap energy had not reached the shores of the western lakes, and manufacturers were unwilling to move their plants to such a remote point. The builders of the canal saw that, if they were to escape failure they must make use of the power themselves. Mr. Clergue was equal to the emergency. He had often been in the paper mills about his home in Maine; he was familiar with the manufacture of pulp; and, since an abundant supply of raw material was at hand in the forests of spruce which stretch northward from the Sault, he determined to build a mill. This mill is now annually making $800,000 worth of pulp at a handsome profit.

The building of this mill was the first step in a great industrial scheme. Other industries that have been developed are the mining of iron ore, sulphur, nickel and copper; the manufacture of iron, steel, and a dozen other such products; lumbering; the construction and operation of railway and steamship lines on the lakes and to European ports, and colonization on a large scale. Everyone of these has grown more or less naturally out of its predecessor. For instance, spruce lumber is worth from $8 to $10 a cord at the paper mills. Before Mr. Clergue began to build a pulp mill, he bought spruce stumpage from the Canadian government at ten cents a cord. Thus he produced pulp more cheaply than any of his competitors. Sulphite pulp is worth nearly twice as much as paper pulp, and he determined to undertake its manufacture. The first necessity was a supply of sulphur. That from Sicily, used in the paper mills of the United States, cost much for freight alone. But a hundred miles to the eastward of the Sault, and easily accessible, were mineral deposits whose ore was a combination of sulphur, nickel, copper and iron. Could not the sulphur in this ore be utilized? A laboratory was built, and the problem was soon solved. Then a mine in the Sudbury country was bought and furnaces for roasting the ore and a mill for making the pulp were put up. After roasting the ore there remained a by-product rich in nickel. The chemists were called upon to devise an electrical method for separating and reducing it. After much experiment they succeeded, and long contracts were made with the greatest of German steel makers, for the purchase of an electrically smelted, nickel-steel product to the amount of 250 tons a day.

Mr. Clergue's chemists, moreover, in the course of their ferro-nickel experiments, found the ore from the Sudbury mine too rich in nickel to make a hard steel without the addition of

a non-nickeliferous pig iron. Here opened another instructive chapter. A short time before there had been a "rush" of gold hunters to the Michipicoten river, 125 miles north of the Sault, on the shores of Lake Superior. One of the prospectors found, not gold, but an outcrop of hematite iron which he offered for $500, and Mr. Clergue bought the claim. The engineers whom he despatched to examine and report upon his purchase found a vast deposit of ore, covered only by rotting leaves and mold.

In the summer of 1899, a supply of iron was needed for the manufacture of nickel-steel. One day in August, a scow, carrying civil engineers, navvies, horses and tools, was towed out of the Sault harbor bound for the Indian mission of Michipicoten. Arriving there the men went ashore, and cleared a corner in the edge of the forest. Tree-clad mountains rose on all sides, and there seemed no possible route for the railroad that they had been ordered to build. Twelve miles away lay the ore, and it was their task to reach it immediately by the easiest route. That was the order, and the only one, from their chief.

Before cold weather set in, the line crossing ravines and mountain walls of rock was surveyed, steam shovels were brought from the Sault, saw-mills were started, buildings were erected, and supplies for the long winter were landed at a dock so new that it still gave forth the fragrance of the forest. The first arrivals in the spring found the road graded and ready for the track layers; and, before the end of July, 1900, one could ride from the mine over a track laid with 80-pound steel rails, in cars of fifty tons capacity, pulled by 100-ton locomotives. Since then vast quantities of ore have been shipped to Canada and the United States, and now blast furnaces for making pig-iron, open hearth furnaces for reducing it to steel, electric furnaces for the ferro-nickel, and rolling mills for the manufacture of rails are being built at the Sault.

To ship ore from the Michipicoten mine ships were lacking, and the rates then charged on the lakes being too high, four ships were bought in England. These ships were the first to pass into the lake through the deep channel lately completed by the Canadian government; and this channel was also first used by them to carry cargoes from the great lakes to the Old World, all of them having been loaded on Lake Erie with steel for England last November. When they return, four other ships of equal or greater capacity, will be practically completed in the Clyde yards. By that time, too, a line of three passenger ships between the Sault and Clergue's new Manitoulin railway to the East, and Michipicoten to the Northeast will be in operation.

This brings us to the railway projects of this exceptional man of forty-two, which are intended to make the Sault the entrepôt of a populous agricultural and industrial region. The Manitoulin and Northshore railway will open up the mineral riches of Sudbury and Manitoulin. Greater things, however, are expected from the Algoma Central, which runs northward from the Sault, and will soon touch the main line of the Canadian Pacific. Beyond that it will run through the primeval wilderness. Two hundred miles further and it will tap Hudson Bay, that great arm of the Atlantic which Canadian statesmen have for a generation dreamed of reaching with a railway. "In five years," says Mr. Clergue, "we shall be carrying salt-water fish from Hudson Bay to the interior of the states."

It is proposed during the next five years to settle 50,000 Englishmen and other desirable Europeans on the land along the line. Many are already on the ground, and some thousands are booked to arrive during the summer. Mr. Clergue's ideas on colonization are characteristic: every effort will be made by his railroad and the parent company at the Sault to transform these immigrants into a self-supporting and contented population. The Algoma Central will be a colonization line of railroad. Thousands of forty-acre farms will be laid out, each with the same railway frontage. The settler, in addition to forty acres, will be given more land in the rear of his first holding. His railroad frontage will not be increased, nor will he be permitted to monopolize the desirable locations.

The Algoma Central will give every farmer access to a side track within a mile of his farm. It will also act as a market for his surplus. Mr. Clergue has planned, for instance, that if more wheat is raised along the road than can be profitably sold, his power company will erect a plant at the Sault for milling it, giving a steady market free from costly transportation charges; if there are more potatoes than will bring a fair price, the

company will make starch, for which there is always a demand; and, if there are too many cattle, or if for any reason the terminal market is unfavorably affected, it will erect abbatoirs and coldstorage warehouses. The settler in marketing his crops will, in short, have the assistance of the Consolidated Company, which, with its twenty millions of capital, now binds together the dozen or fifteen enterprises that Mr. Clergue has developed. The company's interests are so vast, and its millions of acres are of so little value without the success of the settler, that its own future and his are substantially one.

Meantime, Mr. Clergue is mindful of the quest that first led him to the Sault, and he proposes to utilize every drop of water running from Lake Superior except what is needed for the canals and locks of the American and Canadian governments.

On the Michigan side a second canal, which will have 50,000 horse-power is being cut, the largest canal ever cut for the utilization of power. It will run two and a half miles, half of its length, through walls of sandstone, and then through heavy clay 200 feet wide and thirty deep at the upper end, and it will broaden at the lower end into a stream nearly fourteen hundred feet in width. It will turn eighty great turbines. Part of the power thus generated will be used by the company for manufacturing calcic carbide and alkali, for refining metals, and for other purposes, but most of it has already been leased for long terms to outside corporations at profitable prices.

These two canals will not consume all the flow from Lake Superior not needed for navigation purposes, and so a third power canal has been started. This will be on the Canadian side, some distance from the river, and is to be almost as large as the Michigan one. That the diversion of such a tremendous quantity of water may not permanently lower the level of Lake Superior, remedial works are now being built at the head of the rapids of Sault Marie. It is planned that as the flow through the power canals increases, the dams of the remedial works shall be similarly increased, so that the increasing flow through the canals shall be offset by a retarded flow through the rapids. Thus, a few years hence, when all the available water shall pass through the canals, there will be no rapids; and the traveler up the lakes, instead of halting to watch the white water rush down jagged rocks, will see only the dry bed of a vanished river where the rapids were, and he will hear the roar only of the water through the canals, the whirr of wheels and the whiz of saws.

The most noteworthy traits of the man who has planned and is directing these enterprises are his masterly grasp of large undertakings, and his power to inspire others with confidence, and to shape them to his way of thinking. All who follow his lead swear by him, and the day's work with them ends only when the task is accomplished. Results are what he seeks, and those who help him to win them are sure of prompt and generous reward. Few corporations pension men for life who sell for a song what afterwards proves to be worth millions, but the name of the discoverer of the Michipicoten mines is on the pay-roll of the Clergue company and will remain there until death erases it.

Nor is Mr. Clergue too busy for sentiment. When he began clearing the débris that had accumulated above the mines of Hudson Bay Company occupation, near the sleepy village of Sainte Marie, he came upon the lock built by the fur traders two centuries ago to get their boats around the rapids. The very fact of the existence of this lock had been forgotten. He carefully rebuilt it, encircled it with a bit of greensward, and is now completing a large office building overlooking it. Near the old lock he found the rotted remains of a stockade surrounding a tumble-down fort. A parapeted stone wall now replaces the stockade, and the fort, repaired and made habitable, is Mr. Clergue's artistic home.

He has chosen a historic spot as the centre of his labors; for it was on the site of Sainte Marie that in 1670 the Intendant of France, with all the regalia of royalty, received the submission of the tribes of the far northwest, even to the China seas. Here St. Lussan and his comrades took possession for the Grand Monarch of a region whose limits they could not guess; here for decades came the *coureur de bois* and the fur trader; and here in later years has passed the most splendid procession of commerce the world has seen. The new industrial empire which the Bangor lawyer and his associates are building could scarcely have a more romantic birthplace.

SHARING PROSPERI

SOME EXPERIMENTS WHICH SHOW WHY ONE PLAN ANOTHER SUCCEEDS — CLOSER COOPERATION OF WITH EMPLOYER AND ATTENTION TO DETAILS T — REWARD FOR MERIT IS THE IDEA, NEVER FO

BY

R. E. PHILLIPS

IN 1886 a large commercial house in New York had an exceptionally prosperous year. Believing that success was due partly to the intelligent co-operation of their employees, the manager decided to give them a share in the profits, and for three years a cash bonus of three per cent. on wages was paid. But the plan failed. For the first year, indeed, the employees worked with greater interest, but by the second year they had taken the additional money as a matter of course. In 1889 a question came up over putting eight layers of goods under the cutting machine for a certain pattern instead of four. It meant doubling the output with practically no extra work. Yet because the company insisted there was a strike. The share in the yearly profits had not brought closer co-operation—and chiefly because the company gave away money instead of paying it for service. And the scheme was abandoned.

But with the beginning of the present year the company decided to try an experiment along somewhat different lines. Profits now are distributed only if the various salesmen earn their share, though the bonus to be divided is calculated on the volume of business done in all departments and not in separate departments. The man at the necktie counter, if he sells more ties in a month than were sold at that counter during the same month a year ago, received a share just as the man does in the clothing department, where the actual profits to the concern are much larger. A complete record of what each man sells is kept, and this determines his salary. If by large sales he lowers the percentage allowed for marketing the goods his salary is increased. If the sales drop off and the percentage is increased, the salary is reduced. The man receives in money, in as far as it is possible to judge, exactly what he is worth. The plan is even
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in a nutshell. The amount of the dividend to be divided was settled upon as not less than six, and not more than ten, per cent. of the semi-annual dividend paid to the stockholders. By this arrangement the company did not divulge its private business or its total profits. During the first eight years the directors considered and passed upon the plan twelve times. They tried to get at the feeling of the employees, and watched carefully for specific results. In 1895 a circular was sent to each workman, enclosing a blank ballot, with the request that he return it with an estimate of the advantages of their profit-sharing. All ballots were sealed. There was some curious answers.

One man said that the plan was *unfair to the stockholders*.

Six in all voted "no" to its continuance. The others were all in its favor.

One said, "It shows respect from the master. I have received over one hundred and twenty dollars in dividends. Thanks."

Another, who had been a little over four years in the company's employ, said: "It raises the laborer above the mere wage-earner, and I believe the principle right and a benefit to me."

One of the women employees wrote: "I think it is a benefit, because there is not so much changing of help, and they become more interested in their work. It is our duty to do our work, but it is encouraging to feel that we are rewarded for it."

Many of them emphasized the fact that the plan "showed respect from the master," and so encouraged them to do better work.

But results in the development of business had more weight than this expression of opinion. Good wages are of the very first importance. No plan of betterment is possible without what the workers call "honest" pay. The average wage paid now by the Bourne Mills is $7.50 a week. Formerly it was $6; and this was the average in the other cotton mills nearby. It cost one of the mills in the neighborhood of $300,000 to come to the standard set by the Bourne Company. The average pay under the profit-sharing has increased ten per cent., and this notwithstanding that the general standard price of wages was higher formerly than now, and that the working hours have been reduced from sixty to fifty-eight hours a week. The fair rate of wages, good management, and the fact that the pay has always been largely based upon piece-work, have been taken into consideration by the company in determining results. But, as the treasurer of the company recently said, good management is largely the result of an effective working force.

From the beginning the company has tried to enforce upon the employees how clearly the dividend paying must depend upon them, particularly during the years when business is dull and competition close. By making examples of carelessness attention to details has been gained. If the belts in a cotton factory are allowed to run three minutes an hour on loose pulleys it means a loss of five per cent. in the production. But that has all become real to the employees, because they see that carelessness reduces profit—their's as well as the stockholders'. In the making of "seconds," too, there has been a successful change.

The employees call their profit-sharing a "divvy," and regard it much as a stockholder regards his dividend on stock. But they have come to rely in large measure upon the generosity of the company to keep it going. One day, a few years ago, 110 of the male employees left work without permission, to attend a field-day celebration in Fall River. It was a breach of discipline. Nothing was done about it until the day came for paying the semi-annual dividend. On that day each of these men received an envelope marked "gratuity," with a note inside to the effect that although they had forfeited their dividend, a sum not as large as they would have received, but larger, as a matter of fact, than any previous dividend, was restored to them as "gratuity." This good action broke the back of the coöperative idea. In showing good will by a gift, compensation for service was at once lost sight of. It was a return to the old method. It involved the principle of the whole plan. The treasurer of the company has often said in the presence of the men that it was a pleasure to pay them their "divvies;" and the first pamphlet issued mentioned the company's generosity in proposing it. This seems the one weak point in the system. For, in its development, it stands for charity.

By way of contrast, the Proctor & Gamble Company may be mentioned. The company's factory is just out of Cincinnati in the little town of Ivorydale. Here there are about

800 employees, of whom 325 are boys and girls. The business of soap-making requires very little skilled labor, and wages are low. They average $10 a week for men; $4.75 for women; and from $3.50 to $7 for boys and girls.

In 1887 the company adopted the plan of sharing profits. During the previous year there had been fourteen strikes in the factory, involving each time from ten to 100 men. Stability and education were needed. The plan as originally adopted gave a salary of $4,000 to each member of the firm actively engaged in the business, and divided the rest in a certain ratio between the employees and the company. The employees' share was divided according to wages received. All who had been in the company's employ for three months were included, except the boys and girls earning less than $4.50 a week.

In 1890 the company was incorporated, and a new plan was adopted of paying a bonus on wages proportional to that earned by the common stock. A stockholder owning five hundred dollar's worth of stock and an employee earning $500 a year receive the same dividend. The dividends since have averaged more than twelve per cent., and more than ninety, instead of fifty, per cent. of the employees draw their dividend.

There have been several reasons for it all. Since 1892 the employees have been encouraged to become shareholders in the company. Ten dollars assures to any employee one share of the common stock, bought at the market price by a trustee appointed by the company. Two years is allowed to complete the payment and interest on the unpaid balance which is charged at four per cent. Nearly a hundred of the adult male employees own shares in the stock, the total present value of which is almost half a million dollars.

In 1894 a pension plan was established. A portion of the profit dividend is set aside each year, and the company contributes an equal amount. A pension not exceeding three-fourths of the average wages received during the last two years of service is paid to any employee who, on account of old age, sickness or accident is obliged to give up work. The only condition is ten years of service. In 1899 the pension fund amounted to about six thousand dollars, with only one pensioner, and he still earns something by tending the gate at the entrance to the factory grounds.

In the main, good spirit has been shown by the men. Of course there are always exceptions. Men have left the Proctor & Gamble Company in dissatisfaction, but that would always happen even under the best conditions. In August, 1899, thirty-four boys in the packing department went out on a strike. They had all been in the company's employ several years, and had grown to manhood, though they were still on boy's wages. Their action, however, was not so much a protest against profit-sharing as an illustration of the fact that profit-sharing is, after all, only a means. It tends to bring employer and worker into closer relations. And that is all. It does not take the place either of good wages or of permanent employment.

One instance may be taken as typical of the general result. From time to time it is the custom to sum up the results at a meeting of the firm and the employees. Once it was pointed out that where the cost of raw material is the chief cost of production, the best way of saving is the prevention of waste. Formerly, the scraps that came from the machine where the soap was cut were scattered heedlessly over the floor. Once a week the floors had to be scraped, and from this material a low-grade soap was manufactured, which was called "Banjo," and sold at $1.25 a box. By a little attention another grade of soap was obtained from reworking this same material. This grade sells for $3 a box, and as about 10,000 boxes are turned out every day, the saving in material alone is evident. But this is only one instance. The main result is that which the company set out in the beginning to attain —to bring about stability, to give permanent employment at good wages, and to educate their men in the business. At present there are only two men in important positions in the factory who have not been advanced or promoted from the ranks. And these two are employed on account of their technical knowledge and experience.

The main objection to any form of profit-sharing is that it is illogical. It doesn't work both ways. To share a loss means a decrease in wages. And good wages are at the basis of it all. It is, then, only where wages are entirely independent of all hazards of business that profit-sharing—or, better still, prosperity-sharing—can hope to succeed. Moreover, the method is everything. It stands for merit. Charity must be barred.

THE POLITICAL STATUS OF EUROPE—AUSTRIA-HUNGARY[1]

THE MOST EXTRAORDINARY AND CONTRADICTORY GOVERNMENT IN THE WESTERN WORLD—ITS CROSS-PURPOSES BY REASON OF ITS DIFFERENT RACES—ITS STABILITY AND ITS DANGERS

BY

SYDNEY BROOKS

EUROPE holds no more pathetic figure than Francis Joseph, Emperor of Austria and King of Hungary. Merely to set down the story of his life is to unfold a tragedy worthy of the Attic stage. All his life he has been tried as with fire, buffeted by every exquisite experience of sorrow that a man can know and almost every ignominy that a king can endure. He came as a boy to a throne shaken by revolution and an empire seemingly crumbling to ruin. That empire still has a prospect of the same fate. By the fortunes of two bloody wars precious parts of it have been lost to his crown forever. His only son died a violent death under circumstances that are still somewhat of a mystery. His brother Maximilian went to Mexico to establish an empire, but, as it turned out, only to find a grave; for he fell under the weapons of his own subjects—if he could ever have been entitled to regard in that light men whose loyalty was never anything but a matter of interest or compulsion. Maximilian's wife, the Empress Charlotte, lost her reason under the blow. The Queen of Naples, the sister of the late Empress of Austria, was driven from her throne during the struggle for Italian independence. She came to Francis Joseph a fugitive from the ramparts of Gaeta, where she had played a man's part, for want of a man capable of playing it, by encouraging the garrison, at the hazard of her own life, to a splendid but vain resistance. A little over two years ago came the last blow. The nation was just preparing to celebrate the jubilee of its patient, beloved, and sorely stricken monarch when the Empress was murdered by an Italian anarchist. With wife, son, and brother all lost, small wonder the Emperor cried out in his agony, "Is nothing to be spared me in this world?" There must arise the sombre simplicity of another Sophocles before the tragedy of such a life can be felt in its full measure.

And if the past has been bitter, the present and the future, at least in many eyes, seem almost as hopeless. If the cup of all possible personal suffering is full, the portents are dark with presage of political trouble. Europe watches the Dual Monarchy with a sense of impending dissolution.

For more than fifty years Francis Joseph has striven "to solder close impossibilities and make them kiss," and now at last the prophets declare that the forces of disunion are growing too strong even for his quiet and restraining influence. This, as will afterwards appear, is an opinion I venture to dispute; but I have to admit it is a foreboding entertained by many cautious and capable observers. If the Dual Monarchy holds together during the remainder of the Emperor's lifetime, the world will look upon it as a memorable tribute to the place he has won in the hearts of his peoples. If it survives his death for long, it will falsify many an expectation. In either case the closing years of the hapless monarch's life are doomed to be preyed upon by a fearful anxiety for the realm that the Habsburgs have ruled for six hundred years and more.

A GREAT GOVERNMENTAL CRISIS

As I write this chapter, the elections for a new Reichsrath which began early in last December are still continuing. They mark a crisis in the history of Parliamentary insti-

[1] The first article in this series was on Germany, in the February number; the second on Italy, in the April number.

tutions in southeastern Europe; they are likely to be a turning-point in the history of the Dual Monarchy itself. The Emperor announced after the dissolution that this was the last chance his peoples would be allowed to settle their difficulties by constitutional means. The warning can hardly be thought over-hasty. It has indeed been delayed long past the first moment of justification. Within the last three years the Emperor has seen no less than five Premiers adding to and baffled by the confusion of the country. He has seen the Reichsrath turned into a bear-garden, Bohemia convulsed with something more than a pretence of civil war, the German-Czech feud carried to a point where neither side will be satisfied with anything short of a shattering triumph, the partnership with Hungary imperilled by a crisis which has been partly tided over but by no means settled, and the Parliamentary system degraded and nullified in a vicious chaos of polyglot intrigue. He has seen one half of his realm lying exhausted and impotent at the feet of the obstructionists, and the other half taking advantage of its weakness. He has run through all the permutations and combinations of Austrian parties and appealed to each nationality in turn in his search for a durable and decisive Ministry. He has even tried his hand at such constitutional autocracy as Article XIV permits of, an autocracy, of course, very different in kind and effect from the absolutism of his earlier years.

It is therefore only after a quite wonderful forbearance and a long and resolute stifling of his Habsburg instincts that the Emperor has launched his ultimatum. Its intention is clear only up to a certain point, but it has within it at least a definite promise of deliverance and as such has been gratefully welcomed. If the extremists are again in control and the new Reichsrath proves as unworkable as its predecessor, — and there is not the smallest hope or the smallest indication of any other issue, — the Constitution is to be suspended — that much seems assured. Whether after that a new Constitution will be drafted by royal decree and an effort made to secure for it the sanction of a plebiscite; whether the new Constitution, if promulgated, will sweep away the present clumsy and dishonest electoral system and duplicate Count Taafe's rather desperate attempt to flatten out racial enmities under the steam-roller of universal suffrage; whether the standing orders of the Reichsrath are to be revised and strengthened to head off obstruction; or whether the Emperor will take up once more his old rôle of benevolent despot — the benevolence of it may be assumed to-day, though it did not temper the first ten years of his reign — and govern without the hindrance of a Parliament, — are questions to which only speculative answers can yet be given. Whatever happens one may perhaps be certain of three things: —

There will be a short and stormy session of the new Reichsrath, a time of stress and fury and possibly of wild rioting before the Emperor intervenes for the final *coup d'état*.

During this interval the air will resound with prophecies of disruption — the number of people who are periodically scandalized by the obstinacy of the Dual Monarchy in keeping whole in spite of all paper calculations is heartbreaking.

And finally — the third certainly is the best — the realm of the Habsburgs will survive this trial as it has survived other and more pressing crises in the past.

A GRAVE CRISIS

Nevertheless, there is a crisis in Austria-Hungary and a dangerous one, in spite of Dr. Emil Reich's convenient dismissal of the racial ferment as a sign of just that healthy activity in the body politic, for the lack of which Poland perished. The truth of the matter seems to be that Austria is slowly, and under conditions of peculiar complexity, coming in for her full share of the French Revolution and the *bouleversements* of '48. It is the last rumblings of the world-earthquake in the southeastern corner of Europe — not the last altogether, for Spain's turn is still to come — that we have been listening to, the final bout in the struggle for individual and rational assertion.

In such a situation the simpler the conditions and the clearer the objective, the more likely is the revolutionary movement to succeed at a stroke. The infinite cross-currents of Austrian politics, the intermin-

gling of so many opposing interests of race, religion, and economics, saved the realm in 1848, and will always be a barrier to the cohesion and common impulse and determination, without which an agitation must sooner or later crumble away. The complexity of Austria, if it gives too obvious and easy an opening to the small incendiary, is also a safeguard against anything like subversion on a large scale. There is always the chance of playing off one faction against another — as the Czechs were used to police Hungary after the rebellion — and neutralizing a threatening combination by stirring up divisions in its ranks. The Dual Monarchy, in fact, as we know it to-day, is a congeries of nationalities balancing one another, not by an artificial system of checks, but by the natural play of racial enmities and ambitions. The final strength of its position lies in the weakness and antagonisms of its component parts, so that while it is never without a crisis of some sort, it always manages to evade the logical disruption. It is easier to see that it seems forever on the brink of a precipice than to recognize and gauge the forces that keep it from sliding over.

A BABEL ERECTED INTO A GOVERNMENT

The fundamental fact of the realm of the Habsburgs is that its development has been one long exception to the ordinary rules of national growth. The races that compose it[1] have never fused as the Celts and Gallo-Romans, Franks and Iberians, have fused in France, as nearly every nationality under the sun is fusing in the United States to-day. No dominant type has arisen to master its weaker neighbors and weld them into a homogeneous nation. Indeed, as the late Professor Freeman used to insist with lofty impatience and somewhat rasping iteration, the word "nation" has no applicability to Austria and very little to Hungary. To talk of either state so as to give the impression that it can act or think as a unit, is, to use his own shattering conclusion, to talk nonsense. It is this variegated contradictoriness of Austria-Hungary that makes up its fascination for the political student. There is hardly a problem of those that are common to all modern countries with which it is not faced, and in addition it is an inexhaustible problem itself, — a paradox, a mosaic without obvious cement, a Tower of Babel "erected into a system of government," everything, in short, that is abnormal, unreasonable, and impossible. The nationalities that inhabit it have owned a common sceptre and jostled side by side for centuries in an area smaller than Texas, and yet never mingled. Each race has lived its own life, made its own history, produced its own literature, preserved, and, of course, tried to extend, its own individuality.

Austria to-day is what Metternich with less truth called Italy, little more than a geographical expression. Three bonds, to be touched on later, do indeed unite its discordant nationalities; but for the too hasty observer the country might well seem in the last stages of decomposition. There is nothing really Austrian in Austria — no Austrian interests, no Austrian language, or literature, or patriotism, no Austrian nationality, no Austrian standard of civilization; nothing except the Emperor, and the army, and the cockpit of Reichsrath that the races share in common. The Germans form a compact entity by themselves in Upper and Lower Austria and the Duchy of Salzburg. In Bohemia there is a respectable colony of them along the borders of Saxony and Bavaria, over two million strong, but even so outnumbered by the Czechs in the ratio of three to five. All together the German-speaking subjects are about a third of the total population of Austria — some eight and a half out of twenty-four millions. The Czechs in Bohemia, Moravia, and Silesia number roughly five millions. In Galicia some four million Poles hold down a trifle over three millon Ruthenians. A couple of million Slovenes, Servians, and Croats are

[1] The following table will make clear the numerical strength of the various nationalities: —

Austria		*Hungary*	
Germans	8,461,580	Magyars	7,426,730
Czechs	5,472,871	Servians and Croats	2,604,260
Poles	3,719,232	Roumanians	2,591,905
Ruthenians	3,105,221	Germans	2,107,177
Slovenes	1,176,672	Slovacks	1,910,279
Servians and Croats	644,926	Ruthenians	388,392
Italians	675,305	Slovenes	94,679
Roumanians	209,810	Gypsies	82,256
Magyars	8,139	Other races	94,679
Total	23,473,756	Total	17,300,357

scattered over Carinthia and Carniola, while close on a million Italians inhabit the Tyrol. None of these races can alone be said to represent Austria, though all of them claim to; and their mutual wranglings, struggles to realize themselves, struggles to elbow out their neighbors and seize an incontestable ascendency, are the background, and at times something more, of modern Austrian politics.

THE DOMINANT MAGYARS

But for the dashing tenacity of the Magyars, who in politics are the English of the Continent, Hungary might be as heterogeneous as her partner in the Dual Monarchy. The Magyars are only seven and a half out of nearly eighteen millions, but they are a race with the fierce hardihood and determination of the Teutonic stock and a grace and fascination that are neither Latin nor Celtic, but distinctively their own.

Since the two nations entered into a partnership agreement as coequal and sovereign states, the Magyars have devoted all their brilliant energies and the immense force of a concentrated one-idealness to making themselves paramount throughout the southern half of the realm. They revolted against being Germanized, but they see no inconsistency in insisting that the Servians, Croats, Roumanians, and Slovenes shall be Magyarized; and they have set about the task with unsparing persistency just saved from relentlessness by their genius for wise compromise. A restricted suffrage, excluding nineteen-twentieths of the people from the polls, keeps public affairs in their grasp. The schools have been a much more effective instrument in the development of a national feeling, and the Magyars have thoroughly worked them to that end.

Like the Russians and Americans, but unlike the English, the Magyars recognize that where there is difference of speech there will be difference of sentiment, of heart, of interests, and at a pinch perhaps of loyalty, and have accordingly refused to make the preservation of dialects an object of government. Fifty years ago the Hungarian nobles spoke German and a bastard monkish Latin in their homes and Diets. To-day the native tongue obtains, among all classes, and the absorption of all manner of outlanders — Germans, Slovacks, Jews, Roumanians, and Croats — by the irresistible and peaceful process of denationalization in the schoolroom, has gone on at such a pace that the Magyars increase nearly three times as quickly as any of the neighboring races. The struggle of the nationalities in Hungary has ended in a more or less resigned acquiescence in Magyar rule.

THE MAGYAR TENACITY

In Austria, as in Spain, the factory is placed some distance behind the barracks as an element of national welfare, and a contemptuous bureaucracy shackles trade with a hundred entangling regulations. The Magyars, on the other hand, have been as attentive to commerce as to their racial position. Perhaps there is no country in which the state, as such, has done more for industrial development. The really vital domestic problems of Hungary are, indeed, no longer racial, and as freedom of worship is the law, they have never been acutely religious. But in the rise of what is called Agrarian Socialism, a movement which has a future before it not only in Hungary, but in Germany, Spain, and Italy, there is something that before long may test Magyar statesmanship severely.

Meanwhile the Magyars are the backbone of the Dual Monarchy. Against the rising tides of Pan-Slavism they present a compact and unbending front. Together with the German Empire they may be considered the outposts of Europe against Slav aggression; and even in the domestic affairs of the monarchy their unbreakable unity as a political force has made their influence well-nigh decisive. The *Ausgleich* of 1867 — the partnership agreement between the two halves of the realm — prescribed that matters of common concern, such as foreign affairs, diplomatic representation, and naval and military matters, should be arranged by sixty delegates from each country, meeting twice a year. The Austrian delegation is made up of Germans, Czechs, Poles, Ruthenians, Italians, whose feuds make steady coöperation all but impossible. The Hungarian delegation, on the other hand, is composed of fifty-five Magyars and five Croatians, working with the directness and harmony of a single man. The consequence is that in the long run the Hungarian view is pretty sure to carry the

day. So far each renewal of the *Ausgleich* has brought substantial modifications in favor of Hungary, and the centre of gravity has, in fact, shifted from Vienna to Buda-Pesth. The Emperor, when driven to it, might go against the German-speaking Austrians, but never against the Magyars; and the Magyars, fully realizing their power, have extorted concession after concession from their unhappy partner, have applied the screw so persistently, that it is becoming a question whether they are not as unpopular among Austrian statesmen as the very Czechs themselves.

The present troubles of the Dual Monarchy are due to the failure of the Germans to repeat in Austria the successes of the Magyars in Hungary. "You look after your hordes," said Count Beust to a Hungarian statesman when the Austrian Empire became the Dual Monarchy, "and we'll look after ours." The Czechs of Bohemia have turned to ridicule the Count's too valiant declaration. The Germans of Vienna, one must remember, are very different from the Germans of Berlin. Of all the sections of the Teutonic race they appear to have the least robustness of intellect or character and the laxest grip on practical affairs. Indolent, hypercritical, and self-satisfied, they are the emasculated editions of their northern kinsmen. From whatever cause, some paralyzing blight of lassitude and ineffectiveness seems to have eaten its way into their energies. Against their cultured fecklessness the Czechs oppose the elemental force of racial ambition, the driving power of a people that has the consciousness of a great destiny before it and feels itself on the top of the rising wave.

The Germans protest that they have educated themselves beyond the point where race is everything and cannot at this time of day be expected to return to first principles. It is of course tenable that the variety of parties into which the Germans are split up argues an advanced and broad political intelligence. At the same time it makes a poor barrier against the impact of a race that subordinates everything to a single practical end; and unless the Germans are prepared to see a great part of their old ascendency pass away, they must be ready to drop "theorizing," take up the issue that has been forced upon them, and meet their antagonists with weapons not necessarily of their own choosing. In other words, they need simplifying if they are to combat the Czechs successfully. As it is, the Czechs for the last thirty years have been slowly driving them to the wall. City after city has fallen into their hands; Prague and Pilsen, that only a quarter of a century ago were German in tongue and sentiment, are now Slavonized down to their very street names. And in politics and industry as well as music and literature and the lighter arts, the past hundred years have seen the Czechs advance in a quite wonderful fashion. They have long ceased to fear the Germans, and with the disappearance of fear comes naturally the claim to equality.

Moreover, the Czechs have a strong historical case. Four hundred years ago what are now the crown-lands of Bohemia, Moravia, and Silesia formed the Czech Kingdom of St. Vacslav; and what is now Hungary was then the Kingdom of St. Stephen. The Czechs offered their crown in 1526 to the Habsburgs, at the same time, for the same reasons, and on the same conditions as the Magyars; stipulating only that they should retain their old rights of self-government. This contract, together with the Pragmatic Sanction, was the legal basis of the Hungarian rebellion of 1848. The Czechs still use it to point the justice of their demands for a resurrection of St. Vacslav's Kingdom, maintaining that their case is on all fours with that of Hungary, rests on the same documents, and is supported by the same coronation oaths. The Habsburgs, as I have said, never quite lived up to their side of the agreements. They allowed the Turks to overrun Hungary at will, and when the Reformation came and the Czechs gathered round John Huss, they stamped out the heresy in blood and established a strong German colony along the northern borders of Bohemia for the protection of the faith and the suppression of the natives.

As a matter of fact, Bohemia is another Ireland. The German-Slav duel is a minute duplication of the long Anglo-Celt conflict. In both countries the battle-ground is the same. In both we find a demand for Home Rule supported by the native population and resisted by the "foreign garrison"; in both the same bitterness of racial antipathy, ex-

pressing itself in the same old wearisome manner. Even the kind of antipathy is curiously identical. The Czechs are a nation of Healys, and the excursions of that formidable family against Saxon insensibility and pigheadedness would make capital campaign literature for the Czech irreconcilables; while the Germans treat their inflammable neighbors on the "little children in a nursery" theory, which so far has been Ulster's chief contribution to English statesmanship.

But the Czechs have two tremendous advantages over the Irish nationalists. The case for Home Rule would be irresistible and would have been yielded long ago if the Irish still spoke Erse or if Ireland's geographical position were anything but what it is. The Czechs have kept their native tongue alive, and just across their borders — imagine Ireland within two hours' sail of Washington — are their kinsmen of the Russian Empire. The card of Russian sympathy is too easy not to be played for all it is worth, and after every fresh frustration of their national hopes follows the spectacle of five and a half million Czechs cautiously sounding the Czar's "racial instinct." It is this that lends color to the common charge that the Czechs are disloyal, but it is to be noticed that when the situation is reversed and the Emperor makes even the shortest step toward Home Rule, the Germans at once adopt their opponents' tactics, throw themselves into the arms of their Prussian brethren, and vow that sooner than stay and be swamped by a hated and inferior race, they would willingly exchange the Habsburgs for the Hohenzollerns and enroll themselves among Kaiser Wilhelm's subjects. The suspicion cannot be avoided that these dramatics are at bottom intended for home consumption, and that the tune would be quickly changed if the Czar or Kaiser were to listen too seriously.

The whole history of the Dual Monarchy goes to show that real consolidation and unity can be effected only by the seemingly paradoxical method of allowing each nationality the widest possible freedom. Justice toward and equal treatment of all races is the only sure road to peace and permanency. It is a hard one for the Germans to tread, for it means the overthrow of an ascendency once paramount in every corner of the realm; but unless universal suffrage brings to the front an entirely new set of problems, trod it must be.

The interplay of these racial ambitions has been complicated, sometimes retarded and sometimes acutely emphasized, by a hundred differences of religious, economic, and purely political interests, all of which have representatives in the Reichsrath. They act upon one another under the shadow of the racial issues in a way that no foreigner can disentangle. The confusion of the country is worthily reproduced in the fifteen distinct parties and the seven or eight languages that crop up in the Vienna Parliament. Austria-Hungary is a polyglot chaos in which even Austrians do not profess to see more than a half light.

The prophecies of disruption may therefore appear at least plausible. But it is one of the many paradoxes of the Dual Monarchy that it seems unable to break up. In part it is protected, as I have said, by the very diversity and number of the antagonisms it is obliged to house. A more visible bond of union is the army, in which all must serve, which is of all races and creeds, and therefore of none, and the atmosphere of which is broadly and impressively Imperial. What its actual effectiveness will prove to be like, should it ever be tested, is one of the most interesting military problems of the day. The only force with which it can be compared in the excellence of its units and the variety of its nationalities and tongues, is the allied army that rescued the Pekin legations; and the parallel is not altogether hopeful. A polyglot army must of necessity be to some extent a disorganized army, and while the forces of the Dual Monarchy use German as the language of military command, the rank and file and the bulk of the officers retain their own speech for general purposes. The heterogeneous character of its composition has had a steadying influence on the internal struggles of the Dual Monarchy, however much it may hamper its efficiency on the battle-field. The army has kept itself largely aloof from politics, and though the Czechs did once attempt to transfer the racial bitterness to the parade ground by answering the roll-call in their own tongue, a sharp rebuke from the Emperor was enough to bring them to reason.

A second and equally powerful bond of union is the Monarchy. Not only is it accepted everywhere, but the idea of upsetting it in favor of any other form of government has never yet been broached. Even the Kossuth irreconcilables, who would like to see the *Ausgleich* abolished and Hungary direct her own fiscal policy — a quite possible development — and manage her own foreign affairs, still do not propose to sever the personal tie that binds the two countries. And not only is the monarchy secure in the affections of the people, but the dynasty is equally popular. So long as there is a throne it is not conceivable that any one but a Habsburg should occupy it. This twofold devotion to monarchy and to the dynasty has been greatly strengthened of late years, partly by the breakdown of Parliamentary government and the weariness which has made the people look to the throne as an escape from the turmoil and wranglings of small groups, and partly through the patience and wisdom, the sterling fair-mindedness and competency, of the present Emperor as well as the ghastly tragedies of his private life.

But it is a curious delusion to argue that just because Francis Joseph is so adequate and well beloved and comes so near to Walter Bagehot's ideal of what a constitutional monarch should be, therefore the Empire must go to pieces when his moderating and persuasive influence is withdrawn. Such a reign as his is far more than a merely personal triumph: it is the consecration of a system; it exalts the monarchy as well as the monarch, and it smooths out the path for his successors by bequeathing to them an office made more illustrious by his example and memory, more powerful and more deeply based in the hearts of the people. So far from being a signal for dismemberment, the close of the present Emperor's reign is more likely to witness a splendid rally round the house and throne of the Habsburgs.

But the final and irrefutable argument that should give pause to the facile prophets of disruption was summed up by Palacky, the Czech historian, when he wrote that "even if it were not already in existence, an Austrian empire would have to be established, not only to insure the welfare of the numerous nationalities involved, but also to secure the peace of Europe." The peace of Europe would indeed be jeopardized in the event of a scramble for the fragments of the Dual Monarchy. But no such catastrophe is likely, for the reason that it is to no one's interest to bring it about. It is not for secession from, but for the fullest liberty within, the Empire that "the numerous nationalities involved" are struggling. The only genuine secessionists are Herren Wolf and Schönerer and their followers, who wish to incorporate German-speaking Austria with the German Empire. It is possible that their wishes may ultimately be gratified, but not in our time, not till after the next European war, if even then, and not till the Clericalism of Austrian Germans has considerably toned down. What the Czechs and the other races want, is the same independence as the Magyars possess, and such independence is as inconsistent with Russian as with German domination.

In other words, it is against their interests to break away from the Habsburgs. Dismemberment would mean for them the very fate of absorption each and all are most anxious to avoid, and a final answer, from which there could be no appeal except by insurrection, to their dreams of autonomy. The day of small States has gone by, and a lonely Czech kingdom could not exist for a year by the side of Russia. It is a fact which the partition-mongers singularly overlook, that the racial agitation in Austria-Hungry has its subconscious limits very rigidly fixed. The jarring elements that make up the Dual Monarchy may find it hard to live side by side, but they have a pretty shrewd suspicion that they would find it harder to live at all if they parted company.

The foreign politics of Austria-Hungary hardly extend beyond the Balkans, and so long as the present agreement with Russia to maintain the *status quo* in that fiery cockpit lasts, they are not likely to be of much moment. A conflict with Russia is the greatest of all dangers. Austria-Hungary, therefore, cleaves anxiously to the Triple Alliance, and faces a difficult future with the hope, for which she has good reason, that the present international deadlock may be long maintained.

NEW NERVES FOR THE STEAMSHIP

RECENT INVENTIONS FOR PREVENTING DISASTERS AT SEA—THE PRIZES OFFERED BY THE HEIRS OF ANTHONY POLLOCK, LOST ON THE "BOURGOGNE"—AUTOMATIC WARNINGS OF APPROACHING SHIPS, ROCKS, AND ICE—WIRELESS TELEGRAPHY ON DANGEROUS COASTS

BY

HENRY HARRISON LEWIS

TWENTY-THREE great wrecks of the past century caused a loss of 7642 lives. Each one of these was a world-stirring disaster, and for that reason stands vividly in the memory of men. And yet awful as these figures may seem, the reports of the various governmental hydrographic offices show them to be but an insignificant mite in the sum total of ocean mortality. In the old days when civilization was concentrated on one-half of the earth, and only adventurers braved the sea, this would not have mattered so much; but now that the world is rapidly becoming one large country and our globe-trotting population is increasing every year, the question of safety at sea becomes one of the important questions of the age.

During the last few years the United States Patent Office has been deluged with applications for patents on life-saving devices, and quite recently the general interest has been stimulated by a prize offered for the best invention of this sort. And yet even this interest, like many another world movement, was aroused only when a tragical romance brought it home keenly to the public mind. Among those who went down with the ill-fated *Bourgogne* was Anthony Pollock, who was then on his way to France to obtain a patent on a life-saving invention in which he was interested. His heirs have offered the prize ($19,000) "for the best appliance for the saving of life in case of maritime disaster." The competition is now closed, but the decision has not yet been made. Probably this is because of the really remarkable wealth of idea and invention from which the judges have to choose.

Nearly every principle of optics, acoustics, mechanics, electricity, and other sciences has been called to the help of these inventors. And the principles involved are based on all the causes of disaster: the proximity of vessels or icebergs, the quelling of stormy waves, the dissipation of fog, the automatic stoppage of leaks — each man has his idea, and the men range in caliber from the unknown enthusiast to such past masters in the art of invention as Thomas A. Edison and Professor Oliver Lodge. If any one of the leading devices can be made uniformly practicable, we may shortly bid "good-by" to all fear of such calamities as the sinking of the *Bourgogne*, the *Ertogrul*, or the *Princess Alice*.

THE TEMPERATURE OF APPROACHING OBJECTS

Devices designed to prevent collisions are, of course, most numerous. These depend on wireless telegraphy, the detection of delicate sounds, and on heat and cold. The last-named are, of course, especially designed to detect the proximity of icebergs. It is even now practicable to record the approach of one vessel toward another by the heat that the newcomer transmits through the atmosphere. This may seem wonderful, but not so much so when we remember that Ganot recorded in his Physics his invention of a thermopile that was sensitive to the heat of a candle held a quarter of a mile away. He also used another instrument which was sensible to the warmth of a heated penny at a distance of twenty feet. Compare these temperatures with the much greater heat from the galley of a ship or the boilers of a liner, and the possibility of the thermopile becomes very great.

In line with this Mr. Herman Herberts, a Newark scientist, has constructed a thermopile that will detect differences of temperature

as slight as one one-millionth of a degree centigrade. Yet the thermopile is a simple instrument. For instance, if we attach a piece of German silver wire and a piece of copper wire each to a binding post of a galvanometer, we shall have naturally two loose ends of wire dangling from the instrument. If we hold the two loose ends of wire in a candle flame, a current of electricity will be generated immediately and be recorded in the galvanometer. This current is due to the heat and the dissimilarity of the two pieces of wire. But there are metals much more sensitive than these; bismuth and antimony, for instance. And selenium is so extremely sensitive that its electrical properties are seriously affected even by light. A combination of these substances is used in the Herberts thermopile. In practice one thermopile will be used on each side of a vessel. Surrounding each instrument is an outer case containing an alum solution designed to intercept the sun's heat. Above each thermopile is a revolving funnel which turns in every direction of the compass. From the thermopiles wires extend to the bridge of the vessel, where they connect with a sensitive galvanometer. Here are also two bells, one of which rings on the approach of a heated object, as, for instance, another steamer; the other of which rings on the approach of a colder object, like an iceberg. If another vessel approaches within a mile of the ship carrying the thermopiles, the delicate metals are at once affected, a current of electricity is generated which flows through the wires to the pilot-house, where it deflects the galvanometer and rings the bell. Of course the pilot can tell if the other vessel is coming toward him or moving away, by noting whether the current grows stronger or weaker. The bolometer is an instrument similar to the thermopile except that it has a current generated by an electric battery. This current also grows stronger or weaker according as it is brought in proximity with heat or cold.

Admiral Makaroff, of the Russian navy, has invented a thermopile for detecting the approach of icebergs. The device calls for a little channel or tube down in the keel of the vessel and arranged longitudinally so that a constant stream of water can flow in one end of the tube and out of the other. The thermopile is immerged directly in the water rushing through this tube. It is well known that water in the vicinity of an iceberg is very cold. So, if a vessel carrying the Makaroff thermopile were to steam or sail suddenly into such an area of cold water, the thermopile would immediately become affected, and a current would be generated that would ring a bell on the bridge or quarterdeck.

TO TRANSMIT WARNING THROUGH WATER.

Thomas A. Edison has had this question of the safety of ships in mind for years. He has even made experiments. Once in the Clootahatchee River, Florida, he conducted a series of experiments with rowboats in order to see how he could make use of the principle of induction for signalling purposes. He sat in one rowboat; his assistant sat in another, perhaps a quarter of a mile away. Above each boat floated a toy balloon which had been given a metallic coating. Signals were easily transmitted forth and back. In practice, Mr. Edison proposes to use a metallic sail stretched between the masts of a ship, so that she may signal to other ships similarly equipped. But his most feasible idea utterly disregards electricity and depends on the wonderful capacity of water for transmitting sound. As the inventor points out a diver beneath the waves can always detect disturbances in the water even when at great distances from the source of the noise. He can, for instance, hear the throbbing of a steamer's engines or the noise of its propeller or paddle wheels, even though the vessel be more than a mile away. Taking advantage of this phenomenon, he says an apparatus could be constructed in the keel of every vessel for transmitting and receiving sound. In the keel of the vessel he would have constructed a diaphragm operated by compressed air. An electric battery or a dynamo could operate this diaphragm so as to produce an explosive note which would travel miles through the water and be received on the diaphragms of other vessels. If advisable, the Morse or any other code of signals could be transmitted, vessels could communicate latitudes and longitudes to one another, and even long conversations could be carried on.

One of the most interesting instruments for

detecting sounds at sea is that invented by Dr. Joseph Schmitt of the Island of Anticosti. They hear much of wrecks on Anticosti, and the question of saving life at sea is a paramount one on this storm-beaten and ice-bound strip in the mouth of the St. Lawrence. Anticosti is ice-bound five months out of the year, and Dr. Schmitt, during one of these periods of enforced retirement from the world in general, became interested in a book in which the desirability of inventing some device for preventing marine disasters was eloquently pleaded. He set about inventing a sound indicator, building it with his own hands from such material as he could find on the island. It consists primarily of a hood in which the operator stands listening for distant sounds, which are collected in a funnel fixed just above the hood. There is a diaphragm in the funnel and leading down therefrom, two rubber tubes which are adjusted to the ears of the listener. There is also a mariner's compass resting under the funnel to let the listener know which direction the funnel is pointing when it records a sound. Dr. Schmitt made his first instrument from a dry-goods box which he used for a hood, a pair of old stethoscope tubes, and a piece of tin bent into the form of a funnel. Yet it worked successfully from the start. Sounds which could not be detected by the unaided ear, or, if audible, were lost as to direction, were instantly located by the director. Its value on ships and in lighthouses is undeniable, as the throbbing of a vessel may be heard with it when it is not possible to detect it with the ear unaided.

Quite recently at Southend-on-Sea, England, there was shown a device for generating electric waves and transmitting them so that vessels might be warned from rocky coasts. It is less pretentious than the ordinary apparatus for telegraphing without wires and is not intended to be used in carrying on conversations. It is to be placed in lighthouses and lightships so that all vessels passing within seven miles of the coast can instantly be made aware of the fact and can shape their course accordingly. Of course the vessel utilizing it would need to have a receiver on board, but not such complicated apparatus as Marconi uses. Somewhat the same idea is embodied in the gigantic megaphones which, it has been suggested, should be set up on the rocky prominences of our coast.

THE DISPERSION OF FOG

But all of these ideas and inventions presuppose the existence of fog on the ocean, and now Professor Oliver Lodge, of Liverpool, comes forward and asserts that fog is by no means a necessary concomitant of sea life. He says it can be dispersed, and has made experiments which indicate that this claim is well founded. Discharges of static electricity, says Professor Lodge, will be properly arranged to turn all fog banks into rain. Professor Alexander McAdie also has investigated the subject and suggested that experiments be made by the United States Weather Bureau. The idea originated some years ago. Professor Lodge was crossing the ocean, and his vessel was detained several hours by the fog. On his arrival in Liverpool he set to work to see what could be done to dissipate fog on a small scale. He began to investigate the dust fog that often envelops cities. He succeeded in clearing a reservoir of magnesium smoke by means of electric discharges. He also succeeded in clearing a room of thick turpentine smoke by the same means. He announced the result before the British Association for the Advancement of Science. Speaking of his experiences on shipboard, he said: —

> Fog is an unmitigated nuisance. Electric light is powerless to penetrate it, and as we lay down there idle, it was impossible not to be struck with the desirability of dissipating it. It is rash to predict what can be done. It is still more rash to predict what cannot be done. I would merely point out that on every steamer there are donkey engines and that these can drive a very powerful Holtz or Wimshurst machine, one pole of which may be led to points on the masts. When electricity is discharged into fog on a small scale, the fog coagulates into globules and falls as rain. Perhaps it will on a large scale too."

Mr. McAdie urges the practical application of Professor Lodge's ideas. He calls attention to the fact that nearly every steamer carries dynamos which could be used to charge transformers so that at least 50,000 volts could be obtained. Now as a matter of fact, this is merely a mundane application

of what nature does when we talk of the phenomenon called "thunder clearing the air," for a static charge of 50,000 volts is a lightning flash of no mean proportions. It would certainly be a spectacular display, a number of great ocean liners speeding along with artificial lightning leaping from mast to mast. The flashing lights would be a source of protection even if the fog were not dissipated, and this brings us directly to those spectacular devices which even now are available.

The constant use of rockets on a vessel may save it from destruction in a fog bank, and vessels have been known to avert disaster by flashing a searchlight rapidly across and back through the air. For a fog bank is an evanescent thing which may roll up like a rain storm and cover a very limited or a very wide area. And sometimes the shaft of light reaches higher into the air than the low-lying bank of mist.

ILLUMINATED LIFE-SAVERS

Among the devices sent to Paris for exhibition in the Pollock prize contest were several that took cognizance only of the fact that vessels are sure to sink some time or other, and that in the moment of extreme peril some quick remedy must necessarily be forthcoming. Of these was one invented by Chief Constructor of the United States Navy Philip Hichborn. It was a life-buoy, capable of supporting two human beings, — which is already in use on the United States war vessels. In shape it is annular, flat on top. Hanging down on two sides of it are iron tubes, and at the bottom of each is a metal receptacle. This receptacle is so constructed that, when the buoy is thrown overboard, water leaks into it and comes in contact with a powder (calcic phosphide), igniting it and producing a bright flame, which streams out of the iron tubes a foot or more above the water and is visible for miles. The flame will keep alight for an hour.

Constructor Bowles, of the Brooklyn Navy Yard, sent the model for a bulkhead door which he intends shall be inserted in the various compartments of a vessel, and which, operated by electricity, can be closed or opened at a touch of a button from various portions of a ship.

Another device was the invention of W. J. Kennedy of New York City. It is a patent davit for quickly putting a life-boat over the side of a vessel. Many lives have been lost because of the failure of the boat davits to work. In wintry weather they are nearly always covered with frozen spray that gets into the joints and prevents their being turned. The time consumed in chopping away this ice sometimes means a difference between life and death for the imperilled ones. Now the newer davits are constructed so that this ice matters very little. Instead of turning on a pivot, the davits simply fall outward on hinges like the arms of a derrick, the weight of the boat and those on board cutting away the ice that otherwise would clog. A number of patent davits were submitted in competition for the prize. Patent life-buoys likewise were numerous, and some of them not only contained lighting devices, but also food and drink. Life-boats, opened and closed, have been invented in dozens. One of those presented for competition was encircled by a hollow steel belt to prevent its overturning. Of curious interest also was the Eophone, an instrument for detecting faint sounds at sea, the invention of Robert Nevill, of Washington, D.C. This was the device which Anthony Pollock was carrying to Europe to have patented when he lost his life on the *Bourgogne*.

These are the devices of life saving. But there is above and beyond all this the great protective system of the Hydrographic Office in Washington, D.C., which oversees the mariner and his work, plots the charts, lays out the probable tracks of approaching storms, points out the sunken rocks, warns against the cyclone, tells about the tidal waves, directs how oil shall be poured upon the water, describes how the storm centre can be avoided, etc., until the shipmaster starting on a long voyage is able to tell almost with certainty just what dangers he will encounter. This governmental system is, after all, the greatest guarantee of safety on the ocean. It is only when the vessel has passed far out of the ken of man that the invention which wins the Pollock prize will find its great usefulness.

THE PUBLIC LIBRARY AN
PUBLIC SCHOOL.

THE RESULTS OF THEIR CLOSE COOPERATION—E
EXPERIMENT BEGUN BY MR. GREEN, OF WORCEST
HAS SPREAD AND IN A SENSE REVOLUTIONIZED EI

BY

GEORGE ILES

FELLOW OF THE AMERICAN LIBRARY ASSOCIATION

ONE of the most momentous steps ever taken in the service of literature was when, in 1879, Mr. S. S. Green, the public librarian of Worcester, Mass., linked in a systematic manner the public schools of that city with its public library. This alliance, of course, has spread to other cities, but it is only fitting that we should observe it at its source, where its originator, as full of energy as ever, is extending the work along new lines of endeavor.

As far back as 1835, New York enacted a law establishing libraries in the district schools; and the example was copied by twenty other states; but in the main the results were disappointing. As a rule, each library was isolated from every other, there was an absence of care in selecting the first stock of books, and in furnishing new supplies when the old favorites had gone the rounds. Usually, too, the management was incompetent and slack, so that in many places the books, quite unguarded, seemed to melt like snow beneath an April sun.

To-day, in the best practice, a very different state of things has come about. To begin with, the librarian and the teacher confer together with a view to advance their common interests; the teacher himself is accorded for his own work the utmost facilities of the library, and, so far as funds permit, his suggestions for purchases are promptly acted upon. Next, in order to fill the shelves for his scholars, a careful choice is made of the works which may worthily supplement instruction, and of those books which in travel and fiction, adventure and exploit, may provide sound entertainment—such books, indeed, as may introduce boys and girls to the best thought and the worthiest action.

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During the winter months the high water mark of circulation among the public schools of Worcester is a daily average of 2,000 books from the public library. It should be stated, however, that an additional large number of books are given to children for school uses on special cards issued to the children at the library, and that very large numbers of books are used for reference in the library building. In Detroit, a much larger city, the books are five times as many, purveyed to all grades of scholars above the fourth. The library in each school-room is changed once in four months, and no school is likely to get the same books oftener than once in two or three years. The books are in charge of the principal of each building, and are given out under very simple regulations. In Cleveland the public schools are branch stations of the public library; in that city, in Buffalo, Milwaukee and St. Louis, the relations of librarians and teachers are most fruitful.

Not a little ingenuity is displayed in eliciting the young pupils' interest. When the early history of the United States is studied, it receives illumination from the lives of Washington, Jefferson and Adams; at a later period the story of the Civil War is vivified and brought home by the biographies of Lincoln and Grant. Every village, town and city has a history of its own, its roll of honored pioneers and leaders, its tales of heroism and enterprise, its scenic setting and distinctive trades, its home varieties of birds, insects and wild flowers, and all these are borne in mind as book is added to book on the school shelf. Anniversaries, too, become occasions of profit. The birthdays of Franklin, Hamilton and Fulton serve to recall their work for America and the world, the young scholars learning above all else how much of the liberty and happiness of the present were bought by the toil and faithfulness of men who long ago went to their graves. On May 4th of last year Wisconsin celebrated Arbor and Bird Day; the occasion was heralded by the reading of Burroughs and other such authors who may find boys and girls strangers to the tree and the blossom, the bird and the bee, only to leave them their sympathetic friends.

A thought much in the mind of the modern educator is that his opportunity is all too fleeting. A faculty or a talent springs up in early life much as a promising shoot in a garden; give it due recognition and fitting nurture, and in the fullness of time it will yield precious fruit; under neglect or wrong tillage the poor child is doomed to a life wanting the gain and delight it might otherwise have known. Hence it is that the new education offers an unbroken round of appeal. No longer are lessons addressed solely or mainly to the verbal memory: for the hand and eye are hammer, saw and plane, needle and thread, brush and pencil, plastic clay and wire; for the voice and the ear there is music; instead of reading about nature there are excursions to the woods, the fields and streams. The teacher is mindful to declare the limitations of the printed page and relegates the book to a rightful place which it fills more usefully than ever. Fortunately, we live in an era when authors include an increasing proportion of observers and doers, men of experiment and experience; their work admirably supplements the first-hand knowledge, often meagre enough, of those who have just crossed the threshold of the working world.

Incalculable is the importance of thus beginning aright the study of books. The vast majority of pupils leave school about their fourteenth year; thereafter their education, their understanding of what they see in the field or the workshop, in trade or politics will be largely determined by the love of good literature they have formed at school.

Already the soundness of taste developed in good schools has manifested itself in the free choice of books when school days are done. No boy or girl ever comes to an intelligent admiration of Hawthorne, Dana, Stevenson and Parkman, and later for Jane Austen, Thackeray and George Eliot, without an instinctive aversion for the inanities of Oliver Optic, Charlotte M. Braeme and Mrs. Southworth. Just as in the case of the practical talents, a wide freedom to choose from the open shelves, discovers this boy to be strongly aroused by the feats of Kane, Nordenskjold and Nansen, while his playmate finds his heroes in the very different personalities of Watt, Faraday and Edison.*

* The Carnegie Library, of Pittsburg, has just issued a catalogue of such of its books as are recommended for the schools of that city. The titles are carefully graded for use all the way from the kindergarten to the high school. Notes follow the titles. The whole forms a capital guide either for the borrower or the buyer.

THE AUTHOR AND THE PUBLISHER AT PEACE

THE TRADITIONAL FEUD BETWEEN THEM WAS IMAGINARY OR IS PAST IN THE UNITED STATES—THE SQUABBLES AND SUSPICIONS BETWEEN THE TWO CRAFTS IN ENGLAND

BY

MARY B. MULLETT

THERE was a time when there was supposed to be a state of suspicion if not of war between the men who wrote books and the men who published them. The outside world, at least, had an idea that the author was a long-suffering, down-trodden creature, who sometimes dared to claim his own soul but seldom succeeded in collecting his claim. There were then not very many authors. But the persons who write now are more conspicuous and much more numerous than they used to be. During the last ten years the guild has so increased, that you never know but your dearest friend or your next-door neighbor may be secretly writing an historical novel. All men and women are under suspicion. The latest edition of the Dictionary of American Authors contains seventy-five hundred names, and there are seventy-five hundred more persons who think that they ought to be in the list.

Now if this large and important guild were oppressed the public would hear of it; for they are not a silent company. Women's clubs would discuss the oppression; there would be authors' organs and protective associations and all sorts of machinery of defence. And if there were a publishers' and authors' war in these days it would be a right merry war, for the publishers have multiplied almost as rapidly as the authors. But instead of war, there is really a hearty enough friendship, for which there is a good reason.

But in spite of the peace that prevails the gossip-loving public that lives outside the borders of Book Town still do an uncommon amount of talking about authors and publishers—a greater hubbub, indeed, than was ever warranted by the facts. Read the reminiscences of American authors and publishers and you will find testimony to the most friendly relations. For instance, in James T. Fields's delightful "Yesterdays with Authors," the relations of Emerson, Longfellow, Hawthorne, Lowell, and Holmes to their publishers are frankly explained. They were a very happy family. Similar were the pleasant relations between Irving and his publishers. One quarrel or difference in the book-world, such as poor Poe was always having, is exaggerated into a general habit.

The reason that amicable relations generally exist between these two crafts is the best of all reasons—in no other way can each serve the other successfully. To quarrel is to lose. All successful business arrangements rest on mutual trust. But the publishing business in a peculiar sense demands such a personal mutual trust. Every prominent and successful publisher is the personal friend and adviser of the authors whose books he publishes. In fact, one of the principal charms and rewards of the business of publishing—the one thing that makes it a profession rather than a trade—is the delight that the true publisher gets from the friendship of his authors and his pleasant relations with them. He becomes their partner in furthering what they stand for in literature. By the very nature of the business an author is obliged to trust the publisher. There is no practicable plan whereby a dishonest publisher can be prevented from making an inaccurate report to the author. But to make a dishonest report implies not only a very flagrant form of dishonesty on the part of the publisher himself, by the connivance also of his bookkeepers and practically of all his office force—a dishonest establishment, in fact.

And an author who wisely chooses his publisher will choose him in a great measure for

personal reasons, as a man would select any other intimate business partner. A publisher has no right—in the high and proper conception of his calling—to accept any book in which he lacks confidence. He must believe in its character, its mission, its quality. If he have no enthusiasm for it, it becomes in his hands a mere piece of merchandise, and he sells it with no keener personal interest than he would sell pig-iron. The fact that glorifies publishing, as the born publisher practices it, is this—that his work becomes, in a peculiarly intimate way, linked with the author's. It is the most intimate possible coöperation and partnership. An author, who engages a publisher in whose enthusiasm, sincerity and personal interest he does not profoundly believe, makes a grave mistake. It is a personal relation, which is much more than a mere business relation; and the great publishers and the great authors have always so regarded it.

But the careless publisher and the fidgety, suspicious author yet amuse the public and, no doubt, cause each other much worry. For instance, the other day I noticed a successful book lying on the counter in a large book-shop.

"What a hit that book has made!" I said to the salesman.

"Yes, but I don't envy the publisher."

"Why not?"

"Because the author comes in here about four times a week to ask how many copies we have sold. He evidently thinks his publisher is too slow, and he probably makes himself disagreeable."

One writer, who has written many books, has told how she was defrauded—to the best of her apparently sincere belief—of such healthy sums as $5,000, $10,000, and so on. The publisher whom she accused of having the $5,000, waxed rich on his ill-gotten gains, and she finally read in the newspapers that he had invested in land. Upon a portion of this land he set out five thousand fruit trees at a cost of a dollar a tree. The inference was too plain. The author could not help regarding that peach orchard as rightfully hers. When it failed, there was an obvious conclusion. Providence had dispensed justice.

But this same woman spoke with enthusiasm of her present publishers. They are "reputable." That is the amusing feature of the matter. Such an author, as a rule, believes in his own publishers, but there is a queer mental bias which makes him suspect *some* publisher. Chance generally determines which one. A few years ago, when Mr. James M. Barrie was in this country, he created a laugh at the Aldine Club in New York—which is the haunt of the publishers—by beginning an after-dinner speech: "Now Barabbas was a publisher—"

Few authors are—still fewer used to be—good business men or women. As a rule they work alone. They know little of the practical questions of trade. They know little of the cost of conducting a large business, full of detail, and sometimes full of peril. It is the clash between a theoretical view of business and a practical experience that has generally caused suspicion, when it existed. The following is a true incident, which is typical:

One writer who was trying to demonstrate the infallibility of advertising as a multiplier of editions, succeeded in getting the publisher to place a $160 advertisement of the book in a single periodical.

"You think that that will bring up the sales?" asked the publisher.

"I am sure of it."

"Would you like to place that advertising yourself?"

"Oh, no! I think you ought to do it."

It was done. After a few weeks the publisher exhibited the returns. They were $3; no more.

"Well," said the author, "I ought not to have tried to tell you where to advertise. That is your business and you should have attended to it better."

It is not the new writer nor the one who is still struggling for recognition that is the most unpleasant in his estimate of the publisher. It is the man who has just tasted success. The writer who has had one success is in a fair way to have his head turned. With his first book perhaps he hunted a publisher. Now the publishers hunt him. They bid for his work. His royalty doubles, perhaps, and nothing but that implacable "forty-and-ten-off to the trade" keeps him from demanding fifty per cent. of the retail price. When he finds that other men, who have written a dozen successful books, get only ten per cent.—no matter; he thinks that it is his duty to lead the way to liberty by asking fifteen per cent. He does not get it, and he soon learns better.

It seems next to impossible to make the new author realize that if he gets ten per cent. royalty on the retail price of, say, a $1.50 novel, he is getting twenty per cent. of what the publisher sells the book for.

But the pleasant relations that as a rule exist in the publishing world in this country have not come in England. The old feud has become open war there, with Sir Walter Besant as a more or less comic-opera general who wades through seas of ink and counts a day lost when he does not stab at least three or four publishers. No matter how dull other corners of Britain may be, there is always "something going in the literary line."

Sir Walter has no imitator in this country. There is plenty "going in the literary line," but there is no fighting worth speaking about. A proof of the pleasanter relation between author and publisher on this side of the water is the insignificance of American literary agencies. The leading American writers do not market their work—in America, at least—through literary agents. In England the most successful writers sell their books through middlemen. One firm, Messrs. A. P. Watt & Son, which handles Mr. Kipling's work as well as that of several other leading English novelists, draws thousands of dollars annually as commissions on American sales alone. These commissions come out of the pocket of the author, who pays the literary agent ten per cent. of all receipts. A good agent is, however, supposed to pay for himself by attending to all business details. American writers do not seem to feel the need of this middleman. The author and the publisher here understand each other better than they ever did and are putting money into each other's pockets faster than they would have dreamed of a generation ago. Perhaps the full pocket makes the full heart. At any rate the two crafts now dwell in peace.

THE AUTHOR AS THE PRINTER SEES HIM

BY

J. HORACE McFARLAND

IF I may speak of the author as a composite of many individuals, he is usually a most amiable person, vastly well-informed upon the subject of his book, but by no means equally well-informed about the mechanics of printing. The printer may be but mildly interested in the book, but the doing of it into metal, paper and cloth is his daily bread. He is, therefore, likely to be more disturbed by the ignorance of the author about type and proofs than impressed by his profound knowledge upon the subject of his book.

When the colleges and universities come to realize the importance of the graphic arts by which their work is preserved, they may give instruction, at least superficially, about bookmaking. In that happy generation the author will be less of a trial to the printer, and less of an expense to the publisher. He will write better, perhaps; he will at least know how to "mark up" proofs.

As the printer, I have usually begun my work towards the making of a book with a personal note to the author, telling him of my anxiety to have it well done, and delicately hinting that the proof-reader may possibly make suggestions from time to time—*only* suggestions, to be disregarded promptly if not agreeable or to the point. This beginning has usually been courteously responded to, and among the pleasant things which come—occasionally—to the master-printer, none are more agreeable than the notes of appreciation from the authors whom he has served. Of course this presumes a real interest on the part of the printer in the book which is passing through the press, on its way to fame—or possibly to the ten-cent counter of the department store! And if the master-printer cannot have

this interest, and cannot establish this comfortable and sympathetic relation with the author, he has missed his calling, and should give place to a better man. The true typographic craftsman believes with that prince of bookmakers, Mr. Theodore L. DeVinne, that "the time will come when the making of a good book, from the mechanical point of view, will be regarded as an achievement quite as worthy as the painting of a good picture or the building of a good house."

But the actual author is not a composite—he is an individual, and usually very much of an individual. He may have vague ideas about the mechanical work of bookmaking, and, alas! he is sometimes a man who appreciates the true import of words and phrases only when they stand before him in cold type. I have lately been making a theological book for a doctor of divinity. His manuscript was beautiful in chirography and exact in expression. At least it seemed so to us of the print-shop; but I fear we were mistaken about its exactness, for when the doctor got his first, or "galley" proofs, he "sailed into" his own theology as if it were the contention of a rival! When the page-proof followed, he struck still another line of thought, to the consternation of us all; but his chief flow of eloquence presented itself in the form of a voluminous "insert" in the middle of a long chapter, after he had received the "foundry" proofs, which were sent to him only for reference and indexing, and as an evidence that the pages had been cast into the relatively unalterable electrotype. When I gently remonstrated with him, showing him that this last homiletic thunderbolt would cause the destruction of about thirty cast pages, and a resetting of that much of the book, at an expense which I was quite sure the publisher would expect him to pay, he reluctantly agreed to my suggestion that he write down his interpolation to exactly two pages, which could be inserted without great expense.

Some excellent authors cannot "cut" or "fill" to meet the usual typographic needs. I remember one good brother who said that he couldn't, and that I shouldn't, but I cautiously did; and the fun of it was that he was unable to find the places where, to make harmonious work, a word or two had been cut out or added. He was entirely happy; so was I. It should be explained as one canon of good bookmaking, that a paragraph must not end on the first line of a page. Where this happens, the printer asks the author either to "cut" the line, or to add some words to it. Also, a chapter may not end with but two or three lines at the top of a page; it must be cut down to not quite fill the last page, or "padded" to fill at least one-fourth of the short page. If the printer reluctantly cuts or adds, he is religiously careful not to alter the sense in the least.

One author, a man of deep learning and wide general cultivation as well, is an ideal editor. He can add or cut to perfection, and he knows just where to do it so as to cause the least typographic inconvenience or expense. After he has done this work, too, the result is clean, terse English, the admiration of his readers. But this dear man's "copy!" It is a collection of scraps of all sizes on all sorts of paper. One would think manuscript paper was scarce; yet I have sent reams and reams of suitable stationery to him. No one knows what becomes of it, for the stream of scraps continues. I have had "copy" from that man on the back of a tailor's bill—unreceipted—and one chapter of a recent book included odds and ends of paper the other side of which showed that they came from ten of the United States and two countries of Europe. Among the scraps was a friend's wedding announcement; but the wedding date was past, at least, as I was gravely informed upon a gentle remonstrance to the author. His assistant tells me that the only safety for the wedding certificate of our friend is that it is framed, and therefore inconvenient to write upon.

But much may be forgiven to such an author, who is a continual joy to the printer. What matter the backs of envelopes or the scraps of foreign letters when the "copy" they are covered with is perfect in diction, absolutely legible, and ready for the compositor without revision? And then the little private notes which come dropping in with the copy and proofs from this busy man—they bubble with fun; and one wonders how he has had time to acquire so much delightfully expressive slang, or to devise the wonderful phonetic spelling which adorns only these private communications.

Sometimes the "copy" is bad—the poor printer calls it "blind." Good handwriting is greatly to be preferred, however scrappy the paper, to poor typewriting. One author used a pale pink eight-dollar typewriter, and did his

numerous interlineations with a still paler lead-pencil. After the book was out, I respectfully suggested the use of an axe on the typewriter. I am afraid the author did not appreciate the facetiousness of my remark, for he wrote me that it was "indecent." I have wondered since if he may not have thought that my sanguinary suggestion was meant for the operator and not for the machine.

The only other difficulty that I ever had with an author came about through a revision—which was a task that lay beyond my work as a printer—of a book in a series. The editor requested me, during his absence in Europe, to condense or cut down the work. The growing indignation of the author whose redundancy I was pruning was most amusingly manifested in the way he addressed successive communications. At first "Dear Mr. McFarland," I was soon "Mr. McFarland," then "McFarland," and then plain "Sir;" and the last postal card simply started in with an expressive dash! We have made it all up since, over a second edition.

An interesting case was that of the author of a widely-used mental arithmetic. He visited me, and I found that his knowledge was limited to mathematics. He juggled joyfully with the figures, but struggled painfully with the words which connected them. We looked out for the English, and he was grateful. He was followed by the author of a spelling-book, whose copy was beautifully prepared, and with whom we had a pleasant correspondence. One day he came, unannounced, and chose to preserve an *incognito* while he questioned several of the office people—in my absence—about things in general and spelling-books in particular. He tried hard to draw out some expression as to *his* speller, but without success, fortunately.

Then there is the man who is impressed with the deep importance of the work with which he is about to favor the world, and who is apt to linger long over the proofs. A historian recently gave us an experience with this form of author. We were persuaded to begin putting his history in type when only a part of the copy was ready. Nearly two weeks' pondering over each batch of galley proofs did not satisfy him, but it infuriated the composing room foreman, whose business it is to keep his type moving. After the page proofs were sent out, the historian-author came to me with a complaint that the compositors were purposely "spreading out" his book, the pages of which certainly did look more "open" than the daily newspaper he was comparing with. He was dealt with gently, but firmly. Soon the copy gave out, and then began a most harrowing experience. The author lived in my home city, and twice a day (by his wish) the office boy called on him for copy. We got enough to set up two or three pages a day, and so finally we finished the book, which surely added much to our "experience account," as every master printer sadly calls it.

But the last reincarnation of the deliberating author appeared to us in the shape of a medical writer, whose book on a gruesome subject is dragging its way slowly through the press. The doctor hung on to his first lot of proofs over three weeks, and plaintively complained—he is the soul of courtesy—that we were hurrying him unduly, when we suggested a little expedition. When he was half through the checking up of the topical index, he almost "struck," saying that, as he had given such careful attention to the proofs, he ought now to be relieved from looking up his own references. As he is now becoming anxious as to what the reviewers will say of his book, he may eventually come to the point of permitting us to complete it.

A veteran editor—a man of wide experience in journalism and politics—sent a book to my office on one of the great natural products of the Keystone State. Being an editor, he could see no use whatever in writing copy days ahead of its use, and so this book, too, followed the pen very closely. He was delighted to find a corner in the proof-room where he might work, and whence his awful manuscript went quickly to the compositors. Yes, his script was awful, for he frequently balked at it himself when called upon by a despairing compositor. He reminded me of an experience of my own type-setting days, when an editorial writer on an inland city daily was confidently believed to originate new and wonderful alphabetic signs every day. Once I took him a particularly "blind" page of his own, and, after puzzling profanely over an undecipherable phrase, he ejaculated "Damn the man who writes like that!" while he rewrote his own phrase.

The author, as the printer knows him: may his pen never tire, his good humor continue, his practicability increase!

A SHORT GUIDE TO NEW BOOKS

Up From Slavery.

MR. BOOKER T. WASHINGTON'S autobiography is one of those few books that are singled out as remarkable. It is the story of an extraordinary life, simple, yet eloquently told, and there is probably not another American who could write an autobiography of more direct human interest. Beginning in a slave cabin it leads on by the ambitious energy of a boy, and the self-sacrifice of a mother and brother to the then new Hampton school in Virginia; and with sheer force and character of the man it culminates in the making of one of the great educational institutions of the land. The boy who twenty-five years ago slept under a sidewalk in Richmond, is now the head of the Tuskegee Institute with its property and endowment of nearly a half-million dollars. But, greater than that stands the fact that he has undoubtedly done more than any other man towards solving the "Negro problem," and he has given the greatest human document on the subject ever written. (Doubleday, Page. $1.50.)

The Octopus.

We are glad to be able definitely to recommend "The Octopus" as being a book of special interest and merit. The author, MR. FRANK NORRIS, has taken for his motive a wheat crisis, which occurred in the San Joaquin Valley, California, some twenty years since, and around it has woven a story treating of "the People" and "the Trust" from a very unusual and convincing point of view. Combined with this thoroughly practical aspect is an extraordinary blending of realism, mysticism, idealism, pessimism, and optimism and directness—a cosmopolitan disregard for predominance of tone—and an equal, forceful style of construction. None of the sunlight or shadow of Californian life and atmosphere is lost. If a note of immaturity sounds at times, it is more pleasing by way of contrast than otherwise, and does not detract from a book which leaves one with careful and distinct impressions and thoughts of a strong book, strongly written. (Doubleday, Page. $1.50.)

Ten Months a Captive Among Filipinos.

MR. ALBERT SONNICHSEN was arrested by the Filipino insurgents while trying to visit their capital, Malolos, about a week before the outbreak of hostilities between the Americans and the natives. The recital of his subsequent experiences has a unique interest. Carried from place to place, now confined in crowded and filthy prison-pens, now stretched on a hospital cot among dying Spanish prisoners, now befriended by kind-hearted natives and allowed the freedom of the town, he had an opportunity to become acquainted with many sides of the Filipino character. As a first-hand source of information on just the things which all Americans want to know about now this book has very great value. Naturally the seamy side is that most in evidence. Prison sanitation in Luzon is certainly primitive; captured prisoners did not suffer from overfeeding; they endured severe hardships; more than once after the American victories their lives were in danger. Yet, when the necessary allowances are made, the showing is decidedly favorable to the Filipinos, more so on the whole than to the Otis administration, if one reads between the lines. (Scribner's. $1.50.)

Riverside Biographical Series: William Penn, Thomas Jefferson, Peter Cooper.

These short lives of famous Americans seem to have been prepared with at least a partial eye to use for school reading. On the whole, they are well done, though the limitation of equal length involves very unequal treatment; to put Jefferson into the same space with Penn or Peter Cooper implies a readjustment of the scale.

The life of Penn is by DR. GEORGE HODGES, Dean of the Cambridge (Mass.), Theological Seminary. Penn can by no stretch be made out an American; Dr. Hodges does not exaggerate the importance of what was only an incident in Penn's life, but sets forth the essential facts in the life of the seventeenth century English Quaker and gentleman.

MR. HENRY CHILDS MERWIN'S life of Jefferson leaves something to be desired. It follows conventional lines, and has in general the qualities of style and treatment to be feared in so brief a summary. It is more of a political than a personal biography; we fail to get acquainted with the man.

MR. ROSSITER W. RAYMOND writes of Peter Cooper from personal knowledge. This life is excellent. The philanthropist is not permitted to conceal from us the typical American, with his many-sided activities, from inventing a locomotive to running for the Presidency.

Each of these biographies has for its frontispiece an excellent picture of its subject. (Houghton, Mifflin. 75 cents.)

The American Negro.

MR. WILLIAM HANNIBAL THOMAS, himself a mulatto, writes most discouragingly of the capabilities and prospects of the Negro. He concludes that his race is sunk in almost hopeless degradation. Economically and

socially the Negro is often, if not generally, worse off than when he was a slave. Intellectually and morally he appears incapable of high development. Vanity, sensuality and improvidence are of his very nature. So dark is the picture that it loses all its effect. Page after page of sweeping denunciations take the place of facts. The evidence of other witnesses is contradicted. No sufficient basis for the sweeping conclusions appears. Temperateness and a balanced judgment are lacking. A superficiality spoils what ought to have been a very instructive sociological study of the race by a member of it. The picture is true, in places, as a description of existing conditions; but the whole story of the Negro's advancement is left out or minimized, and the sweeping, hopeless conclusions are contradicted by a cloud of veracious witnesses. The condition of the Negroes in many parts of the South is worse than it is generally supposed to be; but that it is bad beyond hope—this is the utterly false impression that the book leaves. The most hopeful work ever done for the lifting of a lowly people since man emerged from savagery is the work done at Hampton and Tuskegee, and the results are an absolute demonstration of the capacity of the Negro. Mr. Thomas's discouraging book is wholly false in the effect it produces and in the inferences that it suggests. (Macmillan. $2.00.)

A Pillar of Salt.

Mrs. Jennette Lee's little story is good enough to make one wish heartily that it was better. It is not free from conventionality, staginess, and false pathos. But it has human people in it—New England people. There is an inventor-genius and child of nature who neglects to patent improvements, and dies as he finishes his machine. There is a faded, hard-worked wife who has to carry cares for two and hates the machine, her rival. As for the wealthy manufacturer who cheats the inventor and leaves his property to the wife—the plot made him. But the triumph of the book is its children. Whatever else may be artificial, they are genuine enough to make any book readable. (Houghton, Mifflin. $1.25.)

Problems of Evolution.

F. W. Headley, a thorough-going evolutionist of the school of Weissmann, takes up in this book two sets of problems: those which concern the evolution of animal species and those which concern the evolution of man. A trained scientific student, he writes with lucidity, abundant illustration, and at the same time in untechnical language. His longest and best chapter is on Natural Selection. In the case of human society he holds that civilization by interfering with the operation of natural selection is bringing physical degeneration, which can be warded off only as morality and religion interfere to prevent the propagation of weakness and misery. But the earlier part of the book is the best, for in it the author is more at home (Crowell. $3.00.)

Highways and Byways In East Anglia.

Mr. William A. Dutt furnishes the text for this latest of the "Highways and Byways" series. The illustrations are again by Joseph Pennell. Occasionally the necessary reduction of scale has brought an unfortunate result, but the lovers of black and white will find in this volume new cause of gratitude to an old favorite. The itinerary of the author carries him through more than seventy towns of Norfolk, Suffolk and East Anglia. He tells many stories drawn from a full memory of literary associations, historic and legendary events, famous families and all that gives locality flavor. Artist and author have worthily collaborated to make this a welcome addition to the series. (Macmillan. $2.00.)

The Lion's Brood.

Mr. Duffield Osborne has here written an uncommonly good historical romance of the days when Hannibal and his brothers (the sons of Hamilcar, the Carthaginian "Lion,") were momentarily expected by the demoralized citizens to be thundering at the gate of Rome itself. The proverb-making campaign of Fabius, the terrible disaster of Cannæ and the life of an Italian city at that time are presented with no little skill, while the usual romantic love story grows naturally enough amid the stirring incidents that form an historical framework for the novel. (Doubleday, Page. $1.50.)

The Private Memoirs of Madame Roland.

Mr. Edward Gilpin Johnson edits this well-known work of a remarkable Frenchwoman, and furnishes an excellent introduction. The translation is a revised form of the one published in London in 1795. Madame Roland was a woman of very extraordinary powers. To intellectual ability she joined great sensibility of imagination and a most dauntless spirit. In the face of the guillotine she wrote this autobiography, doubly valuable as a picture of French society and as a significant human document. (McClurg. $1.50.)

Hypnotism and Suggestion.

Dr. R. Osgood Mason has for many years employed hypnotism in his medical practice. In this book he enters a plea for its more general recognition as a beneficent agency in therapeutics, education and reform. Then he discusses some of the more obscure phenomena of thought-transference, mesmerism and similar matter, such as have now for some years been receiving scientific investigation by the Society for Psychical Research. Some of the examples given are enough to tax one's credulity. (Holt. $1.50.)

Stage Lyrics.

These familiar verses of HARRY B. SMITH, which have been sung and resung by every one who knows "Robin Hood," "Rob Roy," and all the rest of the productions of this nothing if not prolific genius, are brought together in the most attractive way and illustrated with portraits of operatic stars remembered as the creators of many of the parts in the operas. The book contains some of the best of Mr. Smith's creations — which means they are very good — and some of the worst — which means they are very bad. (Russell. $2.50.)

A New Way around an Old World.

THE REV. FRANCIS E. CLARKE and his party hold the record for an all-steam journey around the world from west to east *via* Siberia. This all-steam route was open to travellers only for a few days in May and June of 1900, after the ice broke up in the Amour and before the disturbance in China began. Both on the river-boats of the upper Amour and Shilka rivers and on the lately completed Trans-Baikal section of the Siberian Railway Dr. Clarke found primitive accommodations and abundant discomforts; but he has more to tell us of the bad hotels and emigrant trains, and, though the only information he has to give is that which he picked up on the journey, the new Siberia is so little known a country that most readers will find this an enlightening as well as an entertaining book. (Harper. $1.50.)

Who Goes There?

Mr. E. F. BENSON has based the entire plot of his Civil War novel on a memory-losing hero who fights for the North or the South according as his memory is good or bad. There is, indeed, the kindly, strong Doctor, but his only mission in the story is to make the hero's weakness the more prominent. If the theme is taken seriously, as the author intended, with the pitifully heroic young man as its central figure, it is monotonous and tiresome. The reader cannot drag out a half-sincere sympathy through the whole volume. There is an unconscious humor in the idea, the comic-opera humor of unreality.

The adventures of the young spy, his quick wit, incidents in camp life, are all well done, but it does little good to decorate a house that has no foundation. (Macmillan. $1.50.)

The Shadow of a Man.

This short novel of the Australian bush lands, with its one incident, its day or two of quick action, its manly hero, "clean of body and mind," and the womanly weak and strong heroine, is exceedingly good work for a story of its sort. It really matters little that an all too apparent *deus ex machina* saves the heroine in "Blind-Man's Block," or that three or four slight incidents are frankly made to order. There is health, movement, and humanity in abundance, and an atmosphere of out-of-doors that is inspiring. Mr. Hornung has the trick of making his scene and his people very real. They live from the first word to the last. (Scribner. $1.50.)

New York in Fiction.

The locating of places where we have seen favorite friends in fiction live and suffer and live happily ever afterward, has always a curious interest. Mr. Arthur Bartlett Maurice, limiting himself to New York, has written a very charming book of literary gossip which has been illustrated completely and well. There is a strange fascination in meddling with other people's affairs, even though the people are fictitious. Mr. Maurice knows his material thoroughly. Particularly does he seem to revel in the vicinity of Washington Square, and he touches casually upon the outlying suburban places. The book is an interesting addition to the literature of inquisitiveness. (Dodd, Mead. $1.50.)

The War in South Africa.

CAPTAIN A. T. MAHAN has written a critical narrative of the Boer War down to the fall of Pretoria, in July, 1900. There are already plenty of books about the war by eye-witnesses. But Captain Mahan is a military critic of high authority. Consequently, though it is still, as he himself points out, too soon to write a final history, this carefully reasoned account carries more weight than many personal narratives, and probably in large measure anticipates the judgment of the future.

This sober study of the latest chapter in England's military history sees the light in a curious form. It is printed as text-accompaniment to a veritable picture-book history in album shape. There are eighteen full-page illustrations in color, thirty-five in black-and-white, and innumerable process reproductions of photographs, pen-and-ink drawings, etc. Among the illustrators, Remington, de Thulstrup, and Reuterdahl. (Russell. $5.00 net.)

Choirs and Choral Music.

MR. ARTHUR MEES has written a very concise and satisfactory history of choral music, tracing its early history in the church, on through Bach and Handel to the choral culture of to-day in England and America. Among the many encouraging developments in interest in this country — the growing number of great festivals and conventions and an increasing earnestness in the entire profession — Mr. Mees strikes an important note when he deplores the lack of unaccompanied choral singing. The chapter on "The Chorus and the Chorus Conductor" is perhaps the most generally interesting one in the book, and has added authority in coming from one who has been so thoroughly and well associated with chorus direction. (Scribner. $1.25 net.)

THE MONTH'S MOST POPULAR BOOKS

REPORTS from book-dealers in New York, Boston, Philadelphia, San Francisco, Los Angeles, Pittsburg, Louisville, St. Paul, St. Louis, Detroit and Cleveland, and from librarians in Los Angeles, San Francisco, Detroit, Brooklyn, Hartford, Jersey City, Springfield, Cincinnati, Buffalo, Chicago, Cleveland, New York, Atlanta, and Minneapolis have been combined into the following composite lists:

BOOK-DEALERS' REPORTS

1. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
2. Eben Holden—Bacheller. (Lothrop.)
3. Babs, the Impossible—Grand. (Harper.)
4. Monsieur Beaucaire—Tarkington. (McClure, Phillips.)
5. Eleanor—Ward. (Harper.)
6. The Life and Death of Richard Yea-and-Nay—Hewlett. (Macmillan.)
7. Quincy Adams Sawyer—Pidgin. (Clark.)
8. Rostand's L'Aiglon—Parker. (Russell.)
9. In the Name of a Woman—Marchmont. (Stokes.)
10. Stringtown on the Pike—Lloyd. (Dodd, Mead.)
11. A King's Pawn—Drummond. (Doubleday, Page.)
12. The Visits of Elizabeth—Glyn. (Lane.)
13. The Cardinal's Snuff Box—Harland. (Lane).
14. An Englishwoman's Love Letters—Anon. (Doubleday, Page.)
15. Eastover Court House—Boone and Brown. (Harper.)
16. The Mantle of Elijah—Zangwill. (Harper.)
17. That Mainwaring Affair—Barbour. (Lippincott.)
18. Napoleon, the Last Phase—Rosebery. (Harper).
19. Uncle Terry—Munn. (Lee, Shepard.)
20. In the Palace of the King—Crawford. (Macmillan.)
21. Herod—Phillips. (Lane.)
22. The Turn of the Road—Frothingham. (Houghton, Mifflin.)
23. Tommy and Grizel—Barrie. (Scribner.)
24. The King of Honey Island.—Thompson. (Dillingham.)
25. Up From Slavery—Washington. (Doubleday, Page.)
26. The Heritage of Unrest—Overton. (Macmillan.)
27. The Redemption of David Corson—Goss. (Bowen-Merrill.)
28. Literary Friends and Acquaintance — Howells. (Harper.)
29. The Master Christian—Corelli. (Dodd, Mead.)
30. Crittenden—Fox. (Scribner.)

LIBRARIANS' REPORTS

1. Eben Holden—Bacheller. (Lothrop.)
2. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
3. Eleanor—Ward. (Harper.)
4. The Life and Death of Richard Yea-and-Nay—Hewlett. (Macmillan.)
5. In the Palace of the King—Crawford. (Macmillan.)
6. The Master Christian—Corelli. (Dodd, Mead.)
7. Stringtown on the Pike—Lloyd. (Dodd, Mead.)
8. When Knighthood Was in Flower—Major. (Bowen-Merrill.)
9. Rostand's L'Aiglon—Parker. (Russell.)
10. The Life of Phillips Brooks—Allen. (Dutton.)
11. The Reign of Law—Allen. (Macmillan.)
12. Napoleon, the Last Phase—Rosebery. (Harper.)
13. The Cardinal's Snuff Box—Harland. (Lane.)
14. Elizabeth and Her German Garden—Anon. (Macmillan.)
15. The Life of T H. Huxley—Huxley. (Appleton.)
16. An Englishwoman's Love Letters—Anon. (Doubleday, Page.)
17. Janice Meredith—Ford. (Dodd, Mead.)
18. The Gentleman From Indiana—Tarkington. (Doubleday, Page.)
19. To Have and to Hold—Johnston. (Houghton, Mifflin.)
20. The Redemption of David Corson—Goss. (Bowen-Merrill.)
21. Black Rock.—Connor. (Revell.)
22. Wild Animals I Have Known—Thompson. (Scribner.)
23. A Woman Tenderfoot—Thompson. (Doubleday,Page.)
24. Italian Cities—Blashfield. (Scribner.)
25. Tommy and Grizel—Barrie. (Scribner.)
26. The Riddle of the Universe—Haeckel. (Harper.)
27. Richard Carvel—Churchill. (Macmillan.)
28. Sky Pilot—Connor. (Revell.)
29. Like Another Helen—Horton. (Bowen-Merrill.)
30. Unleavened Bread—Grant. (Scribner.)

Twelve books are mentioned in both lists. Five, "Eben Holden," "Alice of Old Vincennes," "Eleanor," "Richard Yea-and-Nay," and "Stringtown on the Pike" are among the first twelve in both lists, and are, therefore, probably the most widely read books of the month. Three of the five most popular books noted above are of American, two of English authorship. "Eben Holden" and "Alice of Old Vincennes" are mentioned at the top of nearly every separate report and are easily the leaders in popularity. Some of the formerly popular books like "To Have and to Hold," "Janice Meredith," "Richard Carvel" and others are still mentioned, particularly in the librarians' list, Dramatizations are helping, doubtless, to keep these stories before the public. There are six books, not fiction, in the dealers' reports, ten in the librarians' reports.

New books which have taken high place in the dealers' list are "Babs, the Impossible," "A King's Pawn," "Eastover Court House," and "Up From Slavery." "Quincy Adams Sawyer" and "That Mainwaring Affair" have risen rapidly, while "In the Palace of the King," "An Englishwoman's Love Letters," "Stringtown on the Pike," "The Master Christian," "Uncle Terry," and "The Redemption of "David Corson" have all taken a lower position. In the librarians' reports "Richard Yea-and-Nay," "The Life of Phillips Brooks" and "When Knighthood Was in Flower," have risen, while "The Cardinal's Snuff Box" and "Unleavened Bread" have dropped.

Our Unprecedented Ship Building.

OBVIOUSLY the American ship builders are not waiting for a ship-subsidy bill for all the ship yards both on the sea-board and the lakes are crowded with orders. Two new yards have lately been built, and a third soon will be. One of these newer ones is the Trigg Company's Yard at Richmond, Va., situated within a half a mile of an unfailing source of electrical power, and with a water front equal to the launching of the largest types of war ships. Several torpedo boats have already been turned out by this company, and it is now building the protected cruiser *Galveston.*

The Fore River Engine Company, of East Baintree, Mass., has equipped a large plant at Quincy Point, and it has secured contracts for two battleships. Mr. Thomas A. Watson, the head of the Fore River Company was for a long time superintendent of the Bell Telephone Company. Then he organized a company for the manufacture of engines to be used in electric lighting plants, and it is this company that has now turned to ship building.

A number of men of wealth propose to establish one of the largest dry docks and ship yards in the world on the New Jersey flats, a short distance west of the immigration station on Ellis Island, in New York harbor. The dry docks to be built will accommodate the largest ocean steamers, and any ship entering the port of New York will be able to run into them for overhauling or repairs. The necessity for such an establishment has been apparent for many years, but the high price demanded for the most desirable land and the difficulty of securing the co-operation of the general government have hitherto discouraged private corporations.

All of the older yards are crowded with work. The American Ship Building Company, for instance, has under construction at its various yards on the lakes twenty-five vessels, while other lake builders have contracts aggregating $9,000,000. The great ship-yard at Newport News, Va., has under construction or contract a larger tonnage than any American Yard has ever had up to this time, including six cruisers and battleships for the government, and an equal number of merchant steamers of unusual size. The Union Works of San Francisco has in hand five vessels for the navy, and two large merchant steamers for the American-Hawaiian Steamship Company. Three battleships are building by the Cramps who have also in hand two twelve-thousand ton ships for the Red Star Line, and two fine ships for the Ward Line.

The New York Ship Building Company, at its recently opened yard on the Jersey shore of the Delaware, has four great ships under way, and it has closed contracts with the Atlantic Transport Line for four twin screw steamers, each of twelve thousand tons burden. The same line is having two other vessels, each of eighteen thousand tons displacement, built by the Maryland Steel Company at Sparrow's Point, Md., where are also under construction two immense freighters for the Boston Steamship Company. The Eastern Ship Building Company is building at Groton two ships for the Northern Steamship Company, which are to be the largest ships afloat. The Bath, Me., Iron Works, besides a large naval tonnage, is building a 385-foot steamer for the Mallory Line.

Other work in progress could be cited to show the wonderful revival in American ship building. Not only is there a greater tonnage under contract than at any previous period in our history, but the ships will be better. In the old days we built the best wooden ships, and now we build, and seem likely to build, the best iron and steel ones.

The German Shipbuilders.

THE recent death of Carl Laeisz, a leading spirit among the German ship owners and merchants, and at the time of his death Chairman of the Advisory Board of the Hamburg-American Line, has led to renewed comment upon the extraordinary activity and advance made by the German ship-builders and managers. Mr. Laeisz was a fine type of the men who are achieving great things in Germany. Among England's many commercial heartburnings, the attacks made upon her marine interests by Germany touch her

pride as closely as anything can. Within a few years the Germans have set out in a spirit of momentous enthusiasm to largely influence the trade of the ocean; and they have done so in a somewhat spectacular way, which has gained renewed fame for them as a nation.

For a century the English have carried the best trans-Atlantic passenger traffic, the fastest and best ships were England's, and the traveler was made to feel that her vessels were divinely appointed institutions; and certainly no one will gainsay the splendid advance in comfort and speed which was achieved by the English. The Germans and the French entered the field far behind in prestige, in size, in number, and in the speed of their ships. The Frenchmen have caused England no alarm. The chief trans-Atlantic line which carries the American flag sends its irregular and varied company of vessels often limping from one side of the Atlantic to the other, and keeps for months one or two of its ships in the marine hospital; and the American finds no cause for patriotic pride in these records. But the German tells quite a different story and the last year or two has seen his greatest successes. The German "Deutschland" holds the record for speed; the German "Kaiser Wilhelm der Grosse" holds the second place; and the English "Lucania" comes third; while the American ships trail along far after. A single record is saved to England by the "Oceanic," which still exceeds in size, though by no means in speed, the world's vessels. The German ships have managed to draw their trade from the three great countries, by landing passengers on French, English and German soil, thus vastly increasing their earning power. More than this, it is the Germans who have developed the "tourist-ship," including such a range of excursions as to the North Cape in the Arctic and Palestine in the Tropics. They have also established a fast and profitable Mediterranean service, while England has stood idly by. Added to all this, the German steamship lines pay greater dividends than the English, and each year sees their hold on the trade grow stronger and stronger.

England, meanwhile, is barely holding its own in ship construction. At the opening of 1899 the total tonnage of vessels being built in England was 1,385,000 tons; at the beginning of this year it was 1,260,000 tons; and Germany has taken what England has lost. These figures show what Germany is doing in ship-building:

1870	Number of	Ship	Yards....	7
1880	"	"	"	18
1890	"	"	"	25
1901	"	"	"	37

In 1870, 2,800 workmen were employed in these yards and in 1901 the number was 37,850.

The Outlook for Bicycles

A FEW weeks ago at the very beginning of the bicycle season it was reported from Philadelphia that a much larger number of wheels were sold during the week than in the same week last year. "Nothing but a little sunshine and spring weather is needed," it was said, "to set more wheels than ever spinning over the roads and pavements." And this is the story the country over. Consequently the American Bicycle Company has material made up, and parts ready to put together, for by far the largest output of bicycles in the history of the trade. Take the wheel trade as a whole, the initial orders of this season are in a ratio of five to three to those of last year. Bicycling may be something of a fad, but it is much more of a convenience, a means of exercise and of recreation. Improvements in roads, made by towns, cities and states co-operating with wheel clubs, manufacturers and dealers, the low price at which a thoroughly good wheel can be bought, the general prosperity of the people—all these are increasing the output. In the Eastern States where cycling was a "craze" for a time, and where, for the past two or three years, there has been a considerable diminishment in the demand, there is promise of an advance in sales, and in the Middle West and along the coast the wheel trade is growing in large percentages, year by year. In the South, too, though bad roads and the traditional saddle horse have blocked the way, sales of bicycles are increasing rapidly.

The day of radical changes in the making of the bicycle seems to be past. The process is rather one of gradual perfection along the lines already laid out. The "trust," as the American Bicycle Company, which controls many well-known machines, is known, was looked upon with great suspicion at the start, but by consolidation of plants, such as the Spalding with the Columbia and the Barnes with the Monarch, by placing large orders for material and by settling thousands of agencies throughout the country, it has been able to improve the workmanship on its product and to maintain a more regular and a lower net price. It is employing more men, both in the shops and on the road than the separate concerns employed, and is dealing fairly and impartially with its agents, making the same price to them all. It has undoubtedly greatly increased the wheel business of the country, and steadied the entire cycling trade. It is not in any sense a monopoly, for many high-grade wheels are selling widely.

Almost one-fifth of the wheels made this year will be a cheap twenty-five dollar grade, a fact that shows that the wheel is carrying the factory hand to the shop, as well as the professional man to his office. What is more, it often

takes the working man out into the fresh air in his rest hours. The small cost of these wheels well nigh spoils the second-hand wheel business, especially as each year's wheel is always very considerably better than that of the year preceding. The demand for chainless wheels, too, is constantly growing. Nearly sixteen per cent. of the total product this year is of this variety, and about eight per cent. of the total are juveniles.

In the foreign trade, also, there is great progress. Indeed, about fifteen per cent. of the wheels made in this country are shipped abroad. Never did the foreign trade start so prosperously as this year. In Australia, it is true, they are over-stocked. Germany, too, what with second-hand wheels, native product and imports, is not buying, nor England, for practically the same reasons. But from all other countries orders are coming in rapidly—other European countries, Japan, South America and the colonies of the far east. South Africa was one of the best markets in the export trade. The war stopped business for a time. But now there are many large orders entered, and wheels are ready for shipment, waiting for a little word to flash over the cable from the Cape Town agencies. That word will mean "The war is over. Ship all our orders immediately."

America exports at least as many bicycles as all the rest of the wheel-making world, and imports none at all, except perhaps for exhibition purposes.

Advances in Bridge Building.

THE Brooklyn Bridge was nearly seventeen years in building. It took ten years to build the piers. But now the great steel piers of the new East River Bridge from Manhattan to Brooklyn have been put up in two years, and the first of the cables is strung across the river from pier to pier. These cables will be in place within the next six months, and then the work of perfecting the approaches, laying the railway tracks, and putting down the carriage and foot paths will be pushed rapidly forward. The engineers expect to have the bridge completed before the first of January, 1903, and the entire work will probably occupy not much over five years, instead of seventeen.

The company that has the contract to build a railroad bridge over the Hudson between New York City and New Jersey, with a river span of 2,730 feet, and a width of eighty feet, has guaranteed to finish it in six years from the time work begins, and it is believed that an even shorter period will be required for the building of the third bridge across the East River between Manhattan and Brooklyn. The total length of this third bridge will be 9,335 feet, its height above water 135 feet, and its width 120 feet. It will carry, beside a central carriage-way nearly forty feet wide, four trolley tracks and two foot-ways, each eleven feet in width.

It is estimated that 60,000 steel railroad bridges have been built in the United States during the last twenty years, and this steadily enlarging field has brought into existence a great number of bridge-building companies some of which make the whole bridge from the ore to the finished product. Machine tools are now employed to manufacture every part of a bridge, and duplication of parts is adopted to an extent undreamed of a few years ago. There has come to be much truth in the old saying, that "Americans make bridges and sell them by the mile."

The Japanese Study of American Steel Making.

MR. MICHITARO OSHIMA, the head of the Imperial Steel Works of Japan, is on a visit to the United States. The Japanese Imperial Steel Works, valued at $20,000,000, is a government monopoly, and Japan proposes to produce not only the rails and bridges needed for her railways, but also all the more important finished products of the iron and steel industry,

Mr. Oshima was last year sent on a tour of the world to study the best processes and the most modern machinery. He has visited Germany, Belgium, France and Great Britain, where he found that the steel makers are taking lessons from the United States. So he hastened hither, and he has been studying the methods employed in the large steel plants of Pennsylvania, New York, Ohio and Illinois. He will end his investigations in San Francisco, whence he will soon sail for Japan.

This is Mr. Oshima's second visit to the United States. Five years ago he made a study of American methods and machinery, and he has expressed amazement at the changes that have occurred since 1895. He has shown especial interest in the continuous open hearth process, which has been perfected and brought into general use during the last five years, and in the readiness of our manufacturers to send costly machinery to the scrap heap as soon as more efficient and more economical methods are brought to their notice. He sees in this latter practice one of the chief reasons why America has won supremacy in the iron and steel trade. He has already closed contracts for a large amount of American machinery. The Japanese works will be soon equipped with American machinery and operated by American methods. Mr. Oshima thinks that by American methods and machinery the Imperial Steel Company within five years will meet the demand of the Japanese market. He admires the generous spirit of our iron and steel makers, who put knowledge of their methods at the disposal of all comers.

THE NIAGARA OF THE NORTHWEST

The Snoqualmie Falls, nineteen miles from Seattle, are 126 feet higher than Niagara, and furnish the city with immense power

THE WORLD'S WORK

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The March of Events

THE bewildering rush of reorganization and of consolidation, and the astounding rise of values (leaving out the artificial features of the rise), give evidence of a new economic era. The industrial world will henceforth work and think in larger units than before, and the financial centre of the earth has clearly shifted to our shores.

Evidence accumulates that we are witnessing not the culmination but only the beginning of great industrial and transportation combinations. Following close upon the formation of the United States Steel Corporation, which controls mines, fleets, railroads, and furnaces, came almost equally great unions of railway properties under affiliated management; and then naturally enough, followed the purchase by Messrs. J. P. Morgan & Company of the Leyland freight-carrying ocean steamship fleet, which is one of the largest English companies.

This purchase brought into American ownership one of the greatest ocean-going fleets in the world; and it points to ultimate coöperation with existing American lines. It transfers to American control a much larger share of ocean-shipping than we have had since the Civil War. The fleet bought by Mr. Morgan consists of eighteen vessels that are engaged in the direct trans-Atlantic trade and twenty that are engaged in the West Indian trade—with a total tonnage of more than 200,000.

One interesting view of this American purchase of a whole fleet is expressed by the London *Daily Telegraph*:

"The reflection that the British ship-owner has to look very squarely in the face is simple. America has superseded our agriculture, beaten our coal output, left us far behind in the production of iron and steel, and has passed us at last in the total volume of exports. She has only commenced her final onslaught on our carrying trade, and with these beginnings we may wonder, if such things are done in the green tree, what will be done in the dry."

The first fact that impresses one is that the natural working of commercial forces and of American enterprise seems likely to bring directly the results that the ship-subsidy bill in Congress was meant to bring indirectly. We may see the revival of our merchant-marine in the most desirable and natural way possible—by the energy of American financial management. Few events could provoke greater national pride than this. American ships already ply the Pacific. We are in sight, therefore, of transportation lines under closely affiliated ownership across our continent and across both oceans. We do seem likely some day to become the greatest of maritime nations, as we ought to be.

THE ECONOMIC REORGANIZATION OF THE WORLD

THE wonder is that the ocean-carrying trade has not before been better organized after the manner of railway organizations. There is the same chance for saving expenses and giving a more effective service by preventing the waste of competition as in other traffic or in manufactures; and financially the better organization of a large part of the steamship service is of colossal importance.

But there are other points of view that are more important than the direct financial effects to the owners. If one consolidation follows another until a large part of the ocean-carrying trade comes under one management, and if that management be closely identified with some of our great railway systems and in turn also with some of our greatest manufacturing interests—coal, ore, steel, roads, ships, all as if under common ownership—the practical masters of finance are already outdoing the wildest dreamers of world organization.

And yet no new principle comes into play. The foundations for sweeping concentration were laid when modern methods of transportation and modern labor-saving machinery were developed. We are just now beginning to see in concrete form the prodigious revolution in affairs that has taken place in our life-time. It is only this generation of men that has had the use of large capital as a tool. Only recently have men been able to save enough money or enough things of exchangeable value above their immediate necessities to make colossal organization possible. It is this new tool, capital, that makes our life different from the life of men at any preceding period. Perhaps the most important chapter in all modern history is outlined in this number of this magazine by Mr. Conant, wherein he explains not only the chance that accumulated capital has, but the necessity that it should so employ itself. The world has a larger fund of stored-up savings, incalculably larger, than it ever before had.

And the world now has one other thing of equally revolutionary importance—more men of great organizing and great managing capacity. The spread of well-being and the diffusion of opportunity and of education have developed a larger proportion of strong personalities than human society was ever before able to develop. We have, then, literally, a new earth and new forces at work, and a new type of man, who is making a new organization of the world. The change from the conditions and methods of a generation ago cannot be fairly described in any other way.

CHANGES BY EVENTS, NOT BY PROGRAMME

THE builders of Utopias have looked for a new order of things, first by the organization of men and then by the organization of industry afterwards. What is taking place seems to reverse this process. First comes the organization of industry which in turn is fast changing the social structure. It is the result of events and not according to any doctrine or prearranged programme that the change is coming, as indeed all great changes have come.

It is noteworthy that now, while these great changes are taking place, little is heard about the dangers that such events were once thought to bring with them. Dangers there may be. But there is much consolation in two thoughts—first, that no active man would return to the primitive conditions that preceded the era of great organization; and second, that we have not yet gone far enough in this new era to have data for final conclusions. Most of our old-time economic and sociological theories are perishing. But practical men now cheerfully run the risk of wreck which they used to be told lay in this direction —so much more powerful is achievement than all the theories that ever were propounded. Whatever economic and social dangers may be before us—and no man can deny that they may be before us—the fact of the greatest present importance is that no man nor set of men has power to reverse or seriously to modify the course of economic events. The only statesmanship or philosophy that is worth a moment's thought is that which seeks to guide, not that which seeks to obstruct. Moreover, it must take as its data the forces that are now at work, not the imaginary forces of preceding conditions.

THE UNPRECEDENTED RISE OF VALUES

ALL preceding records in stock-trading in Wall street have been exceeded. On April 30, and for several days following, more than 3,000,000 shares a day were sold on the New York Stock Exchange alone. The brokers received the largest orders on record from every part of the country and from

Europe. The increase in the values of the principal stocks on the market since November has aggregated an almost incalculable sum, which must be expressed in billions.

This increase in values is not all nor perhaps mainly fictitious. Very much of it is real and is likely to be permanent. There are at least two reasons for an increase of real values—the assured establishment of the gold standard, and the consolidation of competing corporations. Now for the first time since the Civil War all fear of possible change of our currency standard is utterly gone from the public mind. And an interesting measure is thus given of the incalculable loss and of the serious retarding of our progress caused by the long agitation of the greenbackers, the silver men and the whole brood of currency-inflationists. But for them we might have reached a period of somewhat similar prosperity years ago.

The other reason why much of this increase of values is real is the consolidation of hitherto competing companies. If competition be eliminated or reduced and the issue of stock be fair and the management good, the saving of waste ought to increase their earnings.

Many of our great railway securities—of roads that have been long established and are well managed—have for a long time been kept at prices lower than their real value. A stock that is secure and that pays 6 per cent. must rise, so long as capital remains as abundant as it is, to 150 or even to 200—that is to a 4 per cent, or a 3 per cent. income-yielding basis. But there is no power on earth that can long hold the price of any property higher than its earning capacity warrants.

Fortunately the era of wrecking and of reckless gambling in great properties is passed. But there is still danger that incidental and insufficient reasons will cause a too rapid rise in stocks of insecure value. When all the world is rushing pell-mell into Wall Street, that is a good time for careful investors to calculate the earning capacity of what they buy very conservatively.

THE PENALTY OF PROSPERITY

SUCH unprecented stock-trading will cause thoughtful men to reflect. If these securities were all bought as investments and should be permanently held as investments, no harm could follow. This would mean simply that there is so much money in the country and in the world that the owners of billions of it were content to invest it in securities at a price that will yield only 2, or 3, or at most 4 per cent.

But all this buying has not been for investment. Much of it has been to secure the control of properties for consolidation with other properties; and most of it has been sheer speculation provoked by the activity of the market. For the moment money is abundant, and confidence is great. A man with any credit can borrow easily. Now the part of all this stock-buying that is done for purely speculative purposes—done with money that men expect to put back into productive uses as soon as they are done speculating, or with money that has been borrowed—this much of it is on a false basis; and for this much of it a day of reckoning is bound to come. Damage is wrought to character as soon as men begin to feel that there is a shorter road to riches than the honest production of wealth. To rush into Wall Street to speculate or to send money there purely for speculation instead of employing it in productive ways—this makes for demoralization both of values and of character. The extent to which this abnormal activity is demoralizing—we shall know later; but nothing is more certain than that we shall know in due time.

But it will be an interesting experience for many a man to recall on a quieter and wiser day—how men (and women too) came to New York in such numbers as to overcrowd the hotels, all to trade in stocks; how Wall Street was filled with a mob; how the brokers and their clerks were utterly exhausted; how a seat in the Stock Exchange sold for $70,000; and how some great fortunes were made in a day; and how life at last swung back to routine work with health, and every body thanked Heaven that the fever was past.

SAVING IS HARDER THAN EARNING

AND it is not in Wall Street only that we are paying the penalty of undue excitement over our good fortune, and are running the risk of losing our calmness. In Texas the continued discovery of oil is suddenly enriching many men—good fortune this, surely; but in the feverish organization of corporations (in Texas of all states in the Union!) some men will not only lose money but will suffer economic demoralization.

There are symptoms, too, of land-booms in the Northwest, because of the rush of many settlers. These are the penalties of prosperity—experiences that put to the severest test the sturdy qualities of the people.

There seems no reason to fear that the foundations of our prosperity will be shaken, but nothing is more certain than the loss by many individuals of savings that were hard-earned. The faculty of saving money is much rarer than the faculty of making it, and it calls for the exercise of a higher degree of good judgment and of more self-restraint. In a word, it requires more character.

A GAMBLING EPIDEMIC

THE gambling instinct in a large part of the population has been thoroughly aroused. Woman have gone wild with excitement; clerks and even messenger boys have staked their earnings or their borrowings; and the sensational newspapers have been publishing the winnings of chorus girls and of head waiters. You have read the story of the butler who, overhearing the conversation of his master and his guests at dinner, staked all his savings next day and made $14,000. All through the West and parts of the South small shop-keepers and the whole army of clerks have besieged the local brokers' offices; and orders came in to Wall street in such a rush as to cause the physical collapse of the stock-exchange. The New York brokers simply could not keep up with the business. There were hours when a million dollars worth of stocks were sold every minute.

In the Texas oil region there has been a simultaneous excitement. New companies have been formed as if by contagion, and every part of the population has been gambling in lands and in shares. Fortunes have been made there too—fortunes little or big have been picked up in every part of the land; and the foundation has been laid for a large crop of failures in the future—not bankruptcies that will seriously affect the business of the country, but failures of individuals who mistook gambling for thrift and neglected the homely lessons of careful management.

The damage done to youthful character and to the character of those who are economically weakest lessens the resources of the nation more than the rise in values seems to add to it; for the real resource of the nation is the economic sanity of the whole people. One man of sturdy thrift and of productive energy is worth more in money as well as in character to a community than a dozen rich adventurers. And, after all, the great mass of sturdy people have read about the excitement, have smiled, and gone on with their work. Great as the number of the excited seems to have been, relatively it was very small—perhaps one-half of one per cent. The astonishing thing about any epidemic is how few victims it finds, not how many.

IS THE SOLID SOUTH TO YIELD AT LAST?

WORLD-WIDE economic revolutions have taken place, Asia has been opened to Western trade, Africa has been partitioned, Egypt has been reclaimed, and dynasties, ministries and policies have changed, since the talk began about splitting the solid South; but it was as solid in 1900 for Bryan as it was in 1868 for Seymour. Grant tried to break it by appointing Longstreet to an important office; Hayes tried it by appointing Key; Mahone tried it—there has not been a Republican administration since the civil war that did not try it.

The reason given for the failure of every effort has been the fear of Negro domination. But now there are two new forces at work. The mass of Negroes have been disfranchised in many of the states, and soon will be in more, and the full flood of industrial prosperity is now having effect. An increasing number of men hold fast to the gold standard and believe in expansion. Senator McLaurin of South Carolina, therefore, has a better chance to divide the whites in his state than any man has had before for thirty years, and his practical defection from the Democratic party has secured the help of the Administration in encouraging the growth of a respectable white Republican party in South Carolina. President McKinley has appointed two Gold-Democrats to important positions in that state—Mr. John G. Capers to be United States District Attorney, and Mr. W. G. Chaffee to be Postmaster at Aiken—both against the advice of the old Republican leaders there, and it is predicted in South Carolina that both these men will, with Senator McLaurin, permanently separate themselves from the Democratic party—certainly if it hold to silver coinage and anti-expansion.

It is noteworthy that Senator McLaurin is

not met with the virulent Southern criticism that used to be showered on a "traitor" to the Democratic party. A great change in Southern public thought has taken place and is taking place under the instruction of commercial events. The number of men increases every year who feel as Senator McLaurin feels, that it is suicide to keep out of the great currents of the world. For this reason the sincerely hearty reception given in Southern cities to President McKinley has a deeper meaning than mere courtesy to the Chief Executive. The applause that everywhere greeted his reference to the growth of our foreign trade indicates the direction of a strong current of new Southern sentiment. This is bound sooner or later to express itself in political terms. The inscription over an arch under which he passed in Mississippi was "Expansion."

In other words action—the taking of our rightful place among the nations—and commercial expansion seem likely to bring an independent political era in the South; and, if it do this, expansion will justify itself as the best influence in our political education that we have felt for forty years.

THE SECESSION OF SENATOR McLAURIN

SENATOR McLAURIN believes that expansion, the gold standard, a protective tariff and shipping subsidies are the policies that will make for Southern development. The merit or the demerit of this programme is of less importance than the fact that it is a radical departure, by a man of character and influence, from the "solid" programme of these "solid" forty years; for war, poverty, illiteracy, epidemics and tornadoes have all done less hurt to the South than (be it said with respect to all men of breadth and tolerance) the politicians and the preachers. For these have been the conservators of out-worn opinions and creeds, and they have suppressed intellectual independence. It is they who are to blame for the loss to the nation of the old time southern force and character since the war. They have suppressed thought and prevented growth—these unscarred Colonels who wear long hair and white ties and frock coats, and these doctors of divinity who herd good women by the most stagnant waters of theology.

Now the schoolmaster and the manufacturer are fast getting the better of these "hard-shell" types of men. Industrial and intellectual activity are bound to change Southern leadership. The best evidence that such a change is taking place in politics is the comment by conservative Southern Democratic papers on Senator McLaurin.

"Senator McLaurin says," the Louisville *Evening Post*, declares, "just what thousands of people are thinking and saying all over the South. We want to identify ourselves with every forward movement of the nation, whether it be industrial, commercial, or military." The Mobile *Register* protests against the South's exclusion from its proper place in the nation by "the obstinacy of political leaders who live in a fog . . . and are continually butting their heads against the substantial interests of the country." The Richmond *Times* declares that many men in the South are "sick and tired of the party yoke," and that "if they were left free to vote their sentiments, they would undoubtedly act with the Republican party in national elections." No Southern seceder from traditional political doctrines has before been received with such comments as these.

THE PRESIDENT'S EXPANSION OF THOUGHT

AND, if many Southern men who have always been Democrats find themselves in agreement with the Republican party, on sound money and on expansion, President McKinley has very frankly put himself in line with their traditional position as regards foreign trade. In his speech at Memphis, Tenn., on April 30, he spoke almost if not quite as any Southern free-trader might speak. He said nothing about free-trade or protection, but he spoke of the necessity of foreign markets in a way that would have been forbidden by the old protectionist doctrine; for open doors in other countries for our wares implies a corresponding degree of hospitality on our part to foreign wares. He said:

> "It is your business as well as mine to see to it that an industrial policy shall be pursued in the United States that shall open up the widest markets in every part of the world for the products of American soil and American manufacture. We can now supply our own markets. We have reached that point in our industrial development, and in order to secure sale for our surplus products we must open up new avenues for our surplus. I am sure that in that sentiment there will be no division, North or South."

In other words, the President recognizes the new conditions and he has learned, as he declared that his hearers had learned, that "maxims are not as profitable as markets." The new economic era, the era of our trade-expansion, is bringing great wealth, but it is bringing other benefits even greater; and among them is an expansion of thought in every party and in every section of the country. The commercial men of the South will never again vote for an inflated currency; and the author of the McKinley tariff act will never again have only the home market in his mind. If our unexpected expansion has brought us some difficult problems, it has also taught us all—men of all sections and all political creeds—some lessons of broader meaning than we had before been willing to learn. We are not likely to return to the parochial and sectional view of our own problems or of our own country.

The journey of the President and of most of his cabinet through the South and the Southwest and up the Pacific slope is more noteworthy than any preceding Presidential jaunt, for several lighter reasons, as well as for the significance of his more serious speeches. Hard breathing as the heavily-scented atmosphere of compliment must make, the President speaks with aptness, with sincerity, and, more wonderful still, with variety. He is doing admirable service in emphasizing the benefits of sound money and of thrift as the basis of our prosperity. The journey was a happy idea happily carried out.

SUFFRAGE IN VIRGINIA AND ALABAMA

FOLLOWING South Carolina, Mississippi, Louisiana, and North Carolina, Virginia and Alabama have taken steps to disfranchise the illiterate Negro without disfranchising the illiterate white man. The amendment election in Alabama resulted in a majority for the convention of more than 20,000 votes. Practically no Negroes voted, and the white vote was small. The last Democratic State Convention pledged the party "not to deprive any white man of the right to vote, except for conviction of infamous crime."

In Virginia the Constitutional Convention will meet on June 12 to construct a similar amendment to restrict the suffrage.

There has been heard both in Alabama and Virginia very vigorous protests from white men of influence—not against a restriction of the suffrage, but against a restriction that does not apply alike to both races. But the overwhelming white sentiment in all these States is opposed to restricting white suffrage. Under these amendments an incentive is given to the poor and ignorant Negro to learn to read and to acquire property, but not to the poor and ignorant white man.

The Negro has not been permitted to have an active part in politics in any of these States in recent years. In the actual political result, therefore, these amendments make no change; and they would meet very nearly the unanimous approval of both races and of opinion in every section of the country if they did not put a premium on white ignorance and poverty. The discrimination against the Negro is really a discrimination in a deeper sense against the lowest class of white men; and there is menace for the future in this situation. The best safeguard is educational activity.

A GREAT NEW MOVEMENT IN EDUCATION

IF one were obliged to say what subject, apart from our great industrial activity, is now uppermost in the minds of thoughtful men, he would say Education. It is the season when a very large part of the population visits schools and colleges, when gifts to them are added up and announced, and when visible evidence is given both of the earnestness and of the diffusion of interest in the subject.

It would be an impressive spectacle, if one could see at a glance the whole prodigious educational activity in the land. The colleges never before had so large an attendance; nor the professional schools, except the schools of theology; nor the technical schools; nor the public schools. But more impressive than the mere magnitude of the work is the undoubted improvement in method and the very great extension of special forms of work—the development of technical education for instance, and the wonderfully rapid extension of manual and industrial training (as a matter of mind-culture as well as hand-culture.) This last indeed is the most striking single fact in present educational progress. It seems to have been clearly demonstrated that pupils who are taught to do things with their hands do better work also with their minds than those who do not have manual training. The most noteworthy movement in educational work in

the near future seems likely to be based on this fact. It is a movement straight towards common sense and towards the strengthening of democratic character.

THE SOUTHERN EDUCATIONAL CONFERENCE

A STRIKING evidence of the universal interest in education is the very wide comment that was recently provoked by the Southern Educational Conference which was held this year at Salem, N. C., instead of Capon Springs, W. Va., as hitherto. It was attended by both Northern and Southern men, and its proceedings showed a general awakening to the necessity of popular education in the South—alike for each race. The most interesting papers read were by Southern men who, with great frankness, made the situation plain, and who showed the greatest enthusiasm for the too-long neglected work. Indeed it is doubtful if any men of any calling at any time or in any section of our country ever labored more wisely or more zealously than the best educational leaders now work in the upland South.

The spirit of the Conference was the spirit of earnest men and women who believe that the development of free education in every section of the land and for all the people is our first duty to our country—far more important than politics.

The most important needs of Southern public education are these: (1) to carry on a campaign for the more liberal support of the schools by taxation, especially in the rural regions; and (2) properly to direct help that may come from any other source. The earnest educational workers there are fast arousing public sentiment. To build it up to a point that will compel higher school taxation is the first task.

Then it is the patriotic duty of men everywhere (for the popular ignorance in the South is not a local burden but a national one) to give aid to the energetic and unselfish men who have the practical task in hand.

PRACTICAL EXAMPLES OF SELF-HELP

ONE method of practical help has been successfully illustrated in the very county in North Carolina in which this Conference was held. In the towns of Winston and Salem the public schools have for some time been efficiently organized and managed, but in the neighboring rural school districts there were until recently inadequate schoolhouses, or no houses at all. Public-spirited men in the towns took one school district after another, made an educational campaign among the country people, and in a spirit of neighborliness offered their aid. In a school district that needed a schoolhouse the townsmen would offer to contribute, say, $200, if the residents of the school district would contribute $300. The residents of the school district needed just such inspiration and help as this. The result is that with the expenditure of a small sum of money and of some energetic encouragement, every school district in the county now has a well-built and equipped schoolhouse, and of course the interest in popular education has been correspondingly aroused.

A similar principle has been followed by the management of the Peabody fund. Certain towns in Southern states were selected as beneficiaries. Out of the fund was given a certain sum of money on condition that the towns raise a certain additional sum by local taxation or by private subscription. In the course of two or three years the school systems of these towns were completely revolutionized. The Peabody agent then withdrew his aid from them and gave it in the same way to other towns.

Enough of this sort of encouragement to self-help would, in a few years, equip most Southern communities for public school work almost as well as the rural communities of the rest of the country. The discovery of this principle gives the key to the whole educational situation, and opens a practical way for the best investment that perhaps could be made in public education anywhere in the world.

THE INCREASING CO-OPERATION OF THE RACES

AS regards the education of the Negroes, Southern sentiment has never interested itself in their "higher" education, but it shows approval and even enthusiasm for the common school education, and especially for the industrial education of the blacks. The work done by the Tuskegee Normal and Industrial Institute, for instance, meets the heartiest approval of Southern men of all shades of opinion. All the Southern states are constantly increasing their school appropriations for both races, and the recurring threats to divide the school funds between the races in proportion to the taxes paid by each has

always failed. The whites and blacks share the school funds alike.

But the public schools are in most regions kept open for so short a period, and many of them are taught by teachers so ill equipped, that the good they do is small. To the colored schools for industrial training the white people are giving their personal co-operation more and more freely, as well as state aid. The Slater School for colored youth at Winston, N. C., for instance, has received financial help from the foremost white residents of the town, who serve also on its board of trustees. Mr. Booker T. Washington's invitations to address white audiences in the South increase in number and in importance, as witness two great gatherings at Spartanburg, S. C., and at New Orleans.

As years go by and experience accumulates, it becomes clearer that the work done by General Armstrong in creating Hampton Institute was work of a revolutionary kind. It has claims to the distinction of being the most original and the most useful institution in the land. The impetus that it gives both to public school education and to industrial education is incalculable.

THE OGDEN PARTY

MOST of the attendants on the Conference who went from the states north of the Potomac were the guests on the journey of Mr. Robert C. Ogden, a public-spirited citizen of New York, who is the Chairman of the Board of Hampton Institute, and who has from the beginning been the President of these Conferences. The cause of public education owes him a large debt of gratitude. The party included members of the Faculty of Harvard and Columbia Universities, and more than seventy earnest men and women from all the northern Atlantic states south of Massachusetts, many of them men of great distinction. They visited representative educational institutions, some for whites, some for blacks, in Virginia, North Carolina, Georgia and Alabama. They were entertained with characteristic hospitality by the residents of Salem and Winston, in North Carolina, and were cordially received wherever they stopped. Personal association in this intimate fashion is the most effective means of furthering a great cause; and for this reason these Conferences have already become events of national importance.

A MOST HONORABLE PUBLIC SERVICE

ONE noteworthy fact about the growing interest in good municipal government is the public-spirited work that groups of the best men in many cities do as private citizens without pay. It is now universally acknowledged that in every large city the party system of government has broken down. In other words, partisan city officials—officials elected as Republicans or as Democrats and therefore hampered by a party machine—cannot, if they will, conduct the public service in a business-like fashion. Even men in office who are not controlled by a political machine find it difficult to keep pace in their administration with all the needs of good city government. In other words, no large city can hope for good government without the continuous and active help of a group of public-spirited unpaid men. This is the only safeguard against the evils that come from the indifference of the masses.

Examples of this sort of unpaid, private activity can be found now in almost all our important cities—certainly in all where municipal government is efficient or hopeful. One such example is the Committee of Fifteen in New York, whose purpose is to cut off the revenue that Tammany receives from protecting vice of all kinds. They are business men who work as quietly as possible without "crusades" or professional "reforms" or any other emotional methods, and they seem likely to bring a revolution in municipal government in New York. Mr. W. H. Baldwin, Jr., the chairman, and his associates, go about their task in the same way in which they manage other great business interests that are entrusted to them.

Another example of the same kind in the same city is the Tenement House Commission, an unpaid group of men whose investigations have resulted in the best laws ever enacted in New York to promote decent living in the crowded areas. The city, as a result of their work, will now have a paid and responsible public officer whose business it will be to see that the tenement laws are enforced.

Another such example is the Muncipal Association of Cleveland, Ohio, a voluntary organization controlled by a Committee of Ten, of which Mr. H. A. Garfield is president. It has compelled the nomination of good candidates for city offices, although it

puts forward no candidates of its own; it has defeated ring candidates; it has guarded the city from vicious legislation; it has promoted civil service reform; it has prevented corrupt city contracts; and it has become such a power that it must be reckoned with by both the inefficient and the corrupt.

Until the time come, if it ever come, when we can depend on the public spirit of all the voters in our cities to insure good government, private work of this sort will be necessary. In doing it wisely men win enviable reputations—become, indeed, in a sense, our non-office-holding rulers and servants, to whom we owe gratitude and honor.

THE TASKS OF PEACE IN THE PHILIPPINES

AGUINALDO'S manifesto is characteristically rhetorical but it at last comes to the point:

"By acknowledging and accepting the sovereignty of the United States throughout the Philippine Archipelago, as I now do, and without reservation whatsoever, I believe that I am serving thee, my beloved country. May happiness be thine!"

It has been announced that for some time he will be kept a prisoner, but under less restraint than hitherto; and it is expected that he will give the help of such influence as he has to furthering the work of the Commission.

A startling measure of the severity of the war is given by General Bell's statement (which is, of course, an estimate) that one-sixth of the inhabitants of Luzon have died of fever or in war during the three years since the battle of Manila. Our losses of troops from sickness and in battle and from ambush have been more than 3,500 men.

The surrender of insurgent leaders of small bands has been reported almost every week till they have become of little public interest in the United States, because the war is now ended, and the even more difficult but far pleasanter task is ours to establish and to develop civil government. The important question of the banished friars and the lands that belonged to them, the building of roads, the establishment of courts of justice—these are the tasks that the Commission has in hand. So far as the American public is informed, the Philippine Commission is doing its difficult duties with a zeal and efficiency that entitle the members of it to the lasting gratitude of the nation. The Commission returned to Manila on May 2 after a visit to most parts of the archipelgo, establishing civil government wherever possible.

THE VALUE OF OUR PHILIPPINE EXPERIENCE

NOW that the war is over and we are addressing ourselves to the establishment of civil government in the Philippines, we are beginning to see what an opportunity unexpectedly befell us and into what a valuable experience we blundered. We had never before had such a problem. It had not seriously occurred to us that we should ever undertake such a task, nor should we have sought it. But when we found ourselves responsible to civilization for the future well-being of a long-suppressed people and an undeveloped archipelago, we went forward, blunderingly perhaps, but courageously to work the problem out. Indeed there was never a time when we could have done anything else but go forward with it.

But by manfully taking it up we won the respect of all the great Powers, many of whom had regarded us with indifference, if not with contempt. We have already succeeded in bringing peace, and we shall soon bring an orderly development for the first time in the history of the islands; and both the country and the people will now make such progress in decades as they had not made in centuries under Spanish rule. We hold them in trust for civilization, and as fast as they show capacity for self-government we are bound to give it to them—bound by the very nature of our institutions and by our way of doing things.

In the meantime our presence in the Philippines happened to give us an opportunity promptly to do another good deed for civilization; and our conduct in China has given us influence in the world's diplomacy that centuries of home-keeping shirking of our responsibilities could not have given. This activity at the Antipodes has cost us men and treasure; unhappily, many men and much treasure. But our willingness to give both in the discharge of our natural duties as an important member of the family of nations has brought us respect and power.

And these duties of a new kind in a distant part of the world have lifted our own horizon as no event in forty years had lifted it. Our old-time wretched wrangles over a depreciated currency, over old sectional quarrels, over

protection and a revenue tariff, have been forgotten. We woke up to a sense of our place in the world, and began to think in larger units.

Our strides towards commercial supremacy we should have taken in time if we had had no war with Spain; but we should probably have taken them much more slowly and timidly, for our attitude was an apologetic one towards the rest of the world. We were afraid of entangling alliances, and we were almost content with our home market.

In fact, the experience that the Philippine problem has given us is among the most helpful chapters in our whole national history. We showed again the character of American manhood by the conduct of our navy and of our army; and again we gave conclusive proof, as of old, that, when men of English stock set out to do a new task, hysterical criticism cannot deter them. The race has found its development by doing things. By doing things it has learned its wisdom and built its institutions. Common sense expressed in action—that is the American character, as it has been the English character behind it for a thousand years; and never yet has despondency buttered a single parsnip out of its garden.

THE VISIT OF THE CUBAN COMMITTEE

A COMMITTEE of the Cuban Constitutional Convention made a visit to the United States to confer with the President and the Secretary of War and to find out the temper of the American people. The President received them cordially, and all the questions that they asked at Washington were frankly answered by the proper authorities; and they had opportunity to talk with representatives of every shade of American opinion. They conducted themselves with great dignity too. Most of them refrained from disclosing their opinions through the newspapers, but they uniformly expressed themselves as greatly pleased by their visit and by their reception. But General Portuondo, who had been opposed to the Platt amendment, expressed himself as satisified with it after his interview with President McKinley.

These Cuban gentlemen were as heartily welcomed by American sentiment as by our officials at Washington; and they did well to come. The best way to reach an understanding is by such a conference as they were able to have only in the United States. They got the point of view of the United States government—a point of view that is in every respect friendly to Cuba, but which might naturally be misunderstood in the rhetorical atmosphere of Havana.

There is now less doubt than ever that the Platt amendment will be accepted by the Cubans. There is of course some dissent in Cuba from its terms—there would be some dissent from the terms of any proposition—but every week since the amendment was adopted by Congress substantial progress seems to have been made towards an amicable working basis of agreement.

The most difficult part of our whole Cuban programme is the economic part of it. Are we willing to make a reciprocity treaty whereby her products shall not be too heavily taxed in our market in comparison with competing American products, and whereby her tariff (which a United States commission is now drawing up) shall be favorable to such of our products as she imports?

An amusing turn is given to the American discussion of the subject by the sudden realization by the anti-Imperialists that the effect of the Platt amendment will be to discourage and probably to prevent the annexation of Cuba—in other words, that the Administration's plan is and has always been really anti-Imperialist. The opponents of the Platt amendment play directly into the hands of the Annexationists, who oppose Cuban independence.

WHAT HAS BEEN DONE IN CHINA

FROM sheer weariness the public is losing its acute interest in events in China. Diplomatic negotiations, particularly with a Chinese court, are wearisome and full of delay; but even with these checks on speed, the progress made seems to be unpardonably slow.

The most important matter of the negotiations has now been reached; for the representatives of the Powers have agreed upon an indemnity in the enormous sum of about $337,000,000. It will probably require months to decide whether China can pay it and how she shall pay it.

It will soon be a year since the shocking assault was made on the ministers at Pekin; and the final settlement of the enormously complex difficulties that grew out of the

Boxer movement is not yet in sight. The Imperial capital has been looted and desecrated; European civilization has been disgraced by its soldiers' conduct and by "punitive" expeditions; the Chinese court is as mysterious and vague in its character as ever; the principal Chinese culprits or revolutionists (the royal family excepted) have been put to death; the Empire has not been dismembered, but Russia has control of Manchuria; a fierce controversy about missionary activity and character has been waged all over Christendom with no result except perhaps the abating of the old-time missionary zeal; and through it all, in spite of occasional reports of threatened insurrections against the throne, the great jelly-fish of the Chinese Empire has existed very much as it has existed for centuries—practically undisturbed even by events that in other nations would change both the outward form of government and the direction of civilization.

The main great points for which our Government contended from the beginning have not been lost, even if they have not yet been conclusively settled—the integrity of the Empire, and the open door for trade. The United States has declined to put its legation guard under the command of General von Waldersee; our troops have not joined in his punitive expeditions, and our Government favors a lower indemnity and easy terms of payment.

THE SCANDAL OF THE INDEMNITY

THE fear is that a scandal will be developed about the Chinese indemnity parallel to the scandal of the military misdemeanor of some of the European troops. The total sum proposed to be exacted from China is $337,000,000. The influence of our Government has been used to reduce it. But the influence of Germany and France is to increase the amount by compelling China to pay the cost of the "punitive" expeditions. All the Powers indeed except the United States, England and Japan, present claims for the cost of their forces in Pekin since the legations were relieved, and they do not propose to make deductions from their demands for the loot that has been taken.

As at every preceding stage of the trouble, our State Department has been considerate and just. We have proposed not only to reduce the sum demanded to a minimum and to give China a long time to pay it, but that the indemnity should be apportioned according to the part taken by each nation in the relief of the ministers in Pekin. Our government has favored also the wisest proposal of all—that the extension of the area of trade should be received instead of a part of the money payment of indemnity. This makes directly for the good of China as well as of all the Powers.

A PLAN REALLY TO OPEN THE EMPIRE

JUST as this record is closing, the information is published that the Powers have been asked to agree to an arrangement for opening all China to trade. The formal proposition is said to have come from the Chinese Government, but it is the principle that the United States has contended for from the beginning. Before the attack on the legations at Pekin, it will be recalled, our Government secured an agreement from the principal Powers to maintain the open door.

Hitherto only a small part of Chinese territory has been open to foreign trade at all; and the outside world has hardly touched the fringes of the Empire. The vast mass of the population has never been reached by foreign wares nor by the influence of outside civilization. If the European Powers will accept the opening of the whole empire at once, instead of an oppressive indemnity, the birth of a modern China and of a new era in commerce will begin; and the misguided zeal of the Chinese revolutionists who thought forever to exclude foreigners will have brought about a better result for China and for the rest of the world than statesmanship could have planned.

THE UNITED STATES THROUGH EUROPEAN EYES

THE activity of American buyers of London railway franchises and of English steamships, and the continued American subscriptions to European government loans, have again provoked discussion of a European trade alliance against the United States. That so sensible a journal as the London *Spectator* should treat the subject seriously, rather humorously shows the feeling of panic that American audacity has produced in the foreign mind. The *Spectator* declares that such an alliance of the rest of the world against the United States may become necessary for three reasons, (1) the great wealth and energy of the Americans, (2) the fact

that the United States is sadly in the way in Asia, and (3) the American attitude in South America.

We have taken the Philippines, but we object, the *Spectator* reminds us, "to any but native powers in control of the richest countries of Asia." This remark is interesting because it shows such a gross misapprehension in so intelligent a quarter of the American purpose in the Philippines—as if we had deliberately taken the archipelago, and as if our only interest there was a commercial interest. "The United States," said President McKinley in one of his speeches on his journey, "has never acquired a foot of territory that has not been forever dedicated to liberty." To build up self-government in the Philippines is our motive—a motive apparently utterly incomprehensible to the European mind.

And again, it is not true that the United States will "neither take South America nor let anybody else." Heaven forbid that we should ever "take" South America; and in a sense it is true that we forbid anybody else to "take" it. But the *Spectator* utterly misses the American motive and point of view. It is amazing that the simple original meaning of the Monroe Doctrine—that none but free government is desirable on this continent—is yet incomprehensible. Our willingness to free Cuba without wishing to "take" it is yet a strange and incredible thing to the European mind.

THE ENORMOUS COST OF THE BOER WAR

THE South African war is yet the worst task that any European nation has in hand; and the day of financial reckoning is come in England. The budget presented to Parliament shows a deficit which required the borrowing of $300,000,000. The war has already cost $755,000,000, and the total loss of men is nearly 17,000, about half of whom have died of disease.

Worse even than the enormous cost (as a large body of English opinion regards it) is the necessity of modifying the English fiscal system. Not only must duties be laid on sugar, molasses and glucose, but the income tax must be raised from one shilling to one shilling twopence on the pound sterling, and an export duty of a shilling a ton be levied on coal.

The fiercest controversy has been provoked about this export duty. Export duties are no longer a part of the methods accepted by economists as an advantageous plan of raising revenue, and this proposal brings a new principle into modern English taxation. The government refused resolutely to propose a protective tariff on anything, preferring to depart from accepted principles, in this emergency, only by this export tax. The increase of the income tax brings it almost to six per cent. In other words, every man whose income is more than $3,000 a year must pay a tax on it of $150. A smaller tax is imposed on incomes between $800 and $3,000.

The Boers are divided into small bands, and the British forces are of course similarly divided. It is not organized warfare but guerrilla work, at which the Boers have the advantage as long as they can afford to keep it up. Expectation is expressed almost every week that terms of peace will be arranged. But week by week the long-drawn-out contest goes on. The Boers can never win against British resources, British pride, and British tenacity; but it looks as if it would take forever and a day to convince them of it; and it has already made an enormous drain on the resources of the government.

THE DECLINE OF YANKEES IN NEW ENGLAND

YANKEES are slowly disappearing from Connecticut. Their birth-rate and their death-rate balance each other, but many are going away and the birth-rate among the immigrants to the state is greatly in excess of their death-rate. The proportion of the natives to the whole population, is, therefore, appreciably diminishing.

In the state's vital statistics for 1899, which have just been published, it is shown that of 20,855 births in the state, forty-five per cent. were registered as of both parents foreign-born, and only thirty-nine per cent. of native parents. The registered mortality was 14,381, of whom more than 10,000 were natives. In forty-one country towns the native deaths actually exceeded the births. These figures show that the young people have struck out into new regions, leaving the old folks behind them. The vital statistics of Massachusetts for 1899 show a similar tendency. The native deaths are more numerous than the births, and the births among the foreign population are much in excess of the deaths.

This change is not yet overwhelming, but

it shows a somewhat startling tendency. Yet it is a tendency that may easily be exaggerated as the number of abandoned New England farms has been exaggerated. Since New England is accurate in keeping statistics, we know better what is going on there than anywhere else, and accuracy sometimes has its penalties.

A MEASURE OF THE MONEY-MARKET

IN these times of more or less wild guesses at real values, the loan offered by the British government gives a stable and true measure of the rate of interest in an absolutely safe investment. The government's offer is of £300,000,000 in bonds at ninety-four and one-half, bearing two and three-quarters per cent. for two years, and two and one-half per cent. thereafter. British bonds have for a long time sold at a rate which gives the investor a smaller return than this; but the part of this loan that has been placed was over-subscribed many times. There were eager buyers on both sides the Atlantic. United States bonds at their present price, also yield a smaller return than these. In other words, given absolute security and a reasonably long investment, money can be had for two per cent. in any calculable quantities.

THE MUSTERING OUT OF THE VOLUNTEERS

NO volunteer soldiers will be left in the service of the United States after the end of June, for by the provisions of the Army Reörganization Act they are all then to be mustered out. Regiments of regulars will take their places in the Philippines and elsewhere.

Since the beginning of the war with Spain the volunteers have played an important and efficient part in our military service; and they have proved again, as was proved in the sixties, that after training and seasoning, a volunteer army of the United States is as formidable a force as was ever organized.

There have been in the service, since the Spanish war began, about 225,000 officers and men in the state volunteers, and about 35,000 in the national regiments, making a total of about 260,000. The national regiments, that is, regiments recruited from the whole country instead of from limited localities, took the place of the state volunteers, just as the regulars are now taking their place. Thus the personnel of the army constantly changed. As long as the campaigning was active, fresh men were kept at the front; the army was always young and strong.

Several regiments made enviable names for themselves in the early part of the Philippine campaign. No regiment has been so idolized as the 20th Kansas, or the 10th Pennsylvania, when those two were in service. Those regiments deserve to be congratulated on the opportunities they had of displaying their qualities. They are not praised above the others, but rather regarded as having had special good luck. The country remembers their services, as it does the services of their fellow regiments, with gratitude. Out of the volunteer service have come not only famous regiments, but many officers of note also, Funston among them, and the ex-Confederates, Wheeler and Lee.

When the last volunteer has been mustered out, the army officials can put the reörganized army into shape. It is proposed to station about 40,000 men in the Philippines, 30,000 in this country, 5,000 in Cuba and 1,000 in Porto Rico. These 76,000 men will constitute our standing army, for the present at least.

As one picks up the roster of the volunteers and looks over the list of the regiments, whether they bear the names of States or were called simply this or that number of infantry, one must feel elated at living in a country of which any single section can alone produce thousands of loyal and patriotic men eager to defend it and to uphold its principles.

THE INCREASE OF THE BRITISH AND THE DECREASE OF THE FRENCH POPULATION

THE recent British census shows the vitality of the English race by a satisfactory if not large increase of population. London itself shows only a moderate increase—308,000 since 1891—because there has been during the decade a decided movement to the suburbs, many of which have grown rapidly. Of course, there is no parallel to the rapid growth of some of our cities, but Liverpool has grown 56,000; Leeds, 61,000; Birmingham, 44,000, and Manchester, 38,000. The population of London is 4,536,034, an increase in ten years of 308,000.

In France, on the contrary, there has been a decrease of population during the last five years. The five years from 1891 to 1896

showed a small increase—174,000; but during the last five years the population has fallen off by 12,000.

EDUCATION ON THE GROUND

IF one had to say what is the dullest subject in print, but the most important in practical life, one would not go far wrong by saying Good Roads. Men ought to celebrate our prosperous era, in every part of the country, by building them; for a good road is not only the best investment that any community can make, but the best evidence of enlightened public spirit, the best monument that any generation can rear to itself, and the best bequest to its successor.

A somewhat novel and certainly useful method of arousing the people to action is the very practical method now tried along the line of the Illinois Central Railroad. A train with expert road-builders, the best road-building machinery and laborers, was equipped at New Orleans. It stops at places where good roads are needed, and the men set to work and build a piece of good road, as an object lesson for the people. They explain methods, the cost, and the value, and the pieces of road that they have built remain as examples and an incentive to the community.

This educational enterprise is the joint work of the railroad company, the National Good Roads Association, manufacturers of road-building machinery, and of the Agricultural Department of the National Government. Wherever the party stops, local committees volunteer the use of teams and of additional laborers, and a public meeting is held.

It would be hard to make a plan that would show more common sense or more helpful and far-sighted good judgment than this. It is, in fact, common sense expressed in well-directed action, and these are all the qualities that are required to make a new earth and an improved race of men to live upon it.

AN EXERCISE IN SELF-ABASEMENT

THE making of lists of the hundred best authors has long been an industry of the editors of the professional literary journal. It is an industry that makes men who read good books sad—sad with wonder whether the youngest generation that has reached manhood reads half of them. If the truth could be found out it would be the most interesting piece of
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has been made to the conferring of an honorary degree by Harvard University on President McKinley. To argue against Mr. McKinley's eligibility to the "goodly fellowship of scholars" is easy and yet not convincing. Easy and not convincing, too, is it to argue for it. Witness the tortuous way whereby Senator Hoar worked to his loyal conclusion. It is a misjudgment to argue it at all. Any man who knows the history of Harvard's honorary degrees and knows also American history for the last five years and who thinks such an act inappropriate has profited little by his privileges of American citizenship. Such a man's view of Harvard University would, if carried to its logical extreme, make the University a nunnery for "Miss Nancies." Instead, it persists in being a great American institution of which the Republic is prouder perhaps than of any other institution of any sort within its borders; for it has balance, and breadth, and tolerance even of its narrowest sons whose advice it is too wise to take.

THE SOCIAL SANITY THAT BEGINS IN JUNE

SATURDAY half-holidays in summer are now practically universally observed in many trades and industries, and they send hundreds of thousands of people outdoors. It has brought a great social change of almost incalculable consequence to the indoor working classes. But it is a change that has so quietly and gradually taken place that it is now hard to recall the time—only a few years ago—when the half-holiday was almost unknown.

The change has had an almost revolutionary effect on the popular appreciation of outdoor life; and the popular appreciation of outdoor life may, without much risk of exaggeration, be called the most noteworthy development of popular taste and health and social sanity that this generation has witnessed. It is preventive social treatment of the highest value. It was the fashion not many years ago to discuss the danger of the permanent nervous breakdown of Americans. It is the fashion now to study nature outdoors. Bird-books, flower-books, animal-books, the camera, walking-clubs, bicycle-clubs of course—these have come into their present popularity in very large measure because of the Saturday half-holiday. And the sane recreation idea has grown beyond a half-holiday. The granting of a half-day to employees has suggested to many employers themselves the advantage of taking a full day for golf. We seem likely to escape the danger of working ourselves to death, and that, too, without doing any less work, or doing it less well.

No social philosopher can consider the increasing love of country life by all classes of people without a thrill at the sociological results—saner living, more robust physical characteristics, a growing love of nature, more wholesome sports, the beautification of the earth, better agriculture—all the things that are the antitheses of upholstery, consumption, obesity, bad temper, nervous prostration, and a despondent theology. The quantity of land that is every year brought into use as gardens or parks is a wide-stretching evidence of the artistic development of the people; for the art of the American people is the landscape gardener's art, however crude its general development may yet be. The time is coming when we shall have the most beautiful continent that man ever lived on.

THE BURNING OF JACKSONVILLE.

THE disastrous fire in Jacksonville, Fla., which practically destroyed the town, gave another occasion to prove the readiness with which the generosity of the people in every part of the country goes instantly to the victims of misfortune. It proved also that every town built of easily combustible material is doomed, sooner or later. Good fortune may give some such towns a long lease of life, but they are sure to perish. Civilization requires better building—buildings of less dangerous material—in the future. In a few decades a new Jacksonville, constructed more scientifically than the old town was, will have saved in insurance charges and in the results of the increased activity which security gives, more than the city that has been destroyed was worth.

THE FUTURE OF THE ANTI-IMPERIALISTS

WHAT is to be the future of the Anti-Imperialist party? The concrete results of its activity are the encouragement of the insurgents in the Philippines, the overwhelming defeat of Mr. Bryan, and the nursing of opposition to the United States in Cuba. It is a Party of Dire Predictions, none of which has come true. It declared that we could never put down the insurrec-

tion in the Philippines; but Aguinaldo is now advising peace and the war is ended, and civil government is superseding military rule. It predicted that we would grab land in China, but the influence of the United States has been the one continuous and the most conservative force for the preservation of the Chinese Empire. It predicted the violation of our faith with Cuba, but the Platt amendment is the safeguard against annexation. It predicted the downfall of our liberties and the rise of militarism; but the army has been reduced and no man can say specifically wherein American liberty has been abridged.

The real harm that such an emotional party does is to hinder the growth of an effective party of the opposition. Men cannot gather about a programme of wholesale denunciation.

THIS SUMMER'S POLAR EXPEDITIONS

IF the mere number of searchers for it counts for anything the North Pole will be discovered this summer. Peary and Sverdrup have been in the Polar regions for three consecutive seasons and will continue their work for another. Then a determined effort will be made by Evelyn Baldwin of the Baldwin-Ziegler expedition; a party of Russians will try to crush their way through the ice; Walter Wellman may lead an expedition; and Herr Anschutz-Kampfe, of Munich, may try to make his way under water. This burst of energy is paralleled by a somewhat similar one in regard to the South Pole. Both the English and Germans will send ships and scientific parties into the Antarctic regions; and the Swedes may too; but this is uncertain, since their expedition like the Scottish one and that of the Duke of Abruzzi will probably be postponed until 1902.

So far as the North Pole is concerned the methods that are being used in the effort to reach it grow more and more interesting. Andree's attempt in a balloon was the most novel method but the project of Herr Anschutz-Kampfe threatens to out-do it. He has invented a submarine boat with a speed of three miles an hour under water, which can remain submerged for fifteen hours. He proposes to sink beneath the surface of the ice, proceed until he reaches an opening where he will rise, renew his air supply and then proceed as before. If he does not find an opening he will return to the last one. Baldwin's expe-

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Philadelphia and Chicago, but comparable to them. It is held at the most fortunate time possible—a summer of great prosperity, when one of the uppermost thoughts in the commercial world is the development of trade with Central and South America.

For a long time our practical interests in the people of these countries and in their trade has gradually been increasing, but we have till recently been too much a home-keeping people even to do our full duty towards the development of closer relations with them. The time is now ripe for a rapid increase of our interests there—for mutual profit and benefit.

While the bringing of all parts of our continent into closer relations is the main purpose of the exposition, it is not the only purpose. As a spectacle of great beauty and of striking and novel architectural effects, especially in color, it will attract and instruct the whole people. Very noteworthy and beautiful effects have been produced by the landscape architects, appropriately celebrating and exemplifying the steady advance of their art. The noteworthy advances that have been made in the practical applications of science, especially in electricity, since the World's Fair at Chicago, are strikingly exhibited, thanks to the great power of Niagara. The managers and the builders have made a really great fair, and it has perhaps been more extensively and attractively made known than any similar enterprise ever was. There will be great crowds to see it, and they will be repaid for their outlay of time and money.

A large part of the August number of this magazine will be given to a description and an interpretation of the Fair (with many illustrations from photographs taken for this purpose only); for it falls directly in line with one of the chief aims of THE WORLD'S WORK.

TEACHING FARMERS AT HOME

THE CORRESPONDENCE SCHOOL OF AGRICULTURE AT CORNELL UNIVERSITY—ITS METHODS AND SOME OF THE INTERESTING RESULTS—LETTERS FROM FARMERS WHO TAKE THE COURSE

BY

JOHN CRAIG

PROFESSOR OF UNIVERSITY EXTENSION TEACHING IN CORNELL UNIVERSITY

FARM life is said to be monotonous, and the oft-repeated statistics giving the percentage of insane farmers and farmers' wives are quoted in support. Why is it monotonous? Because in many cases the eyes of the worker are not open to objects teeming with interest which surround him on every side. He sees in the fruit tree only so many bushels of fruit, in the wheat field sacks of grain, and in the corn field tons of silage for his milch cows, or bushels of corn to be transformed into pork. Should he not think of the wonderful chemistry of nature which captures the raw materials of the soil and elusive elements of the air, and changes them into apples, wheat and corn, and again into bacon, beef and butter? How is this done? How may the various steps in the transforming process be hindered or facilitated? When he knows something of these processes his power as a coöperator with nature is vastly increased, his interests centred.

There are those who but await the awakening touch of education to place them in complete harmony with their surroundings.

A correspondence school for farmers has been organized, and is being conducted by the University Extension Department of Cornell University. It is paid for by state appropriation, and is given to the agricultural breadwinner without any charge whatever. While Cornell's reading course for farmers does not attempt to educate in a pedagogical sense of the word, it elucidates principles which add not only to the active enjoyment of farm occupa-

tions, but which, if practiced, increase and cheapen crop production. There are in the ranks of the farming class thousands of clear-headed, broad-minded men, strong men who lack chiefly on the side of mental orderliness because of deficient scholastic training. While this defect is difficult to correct, yet much may be accomplished by systematic reading even late in life. The reading-course is doing excellent work in illuminating cloudy notions about farm practice; by inspiring courage through the acquisition of knowledge, and above all, by teaching the farmer to recognize the true dignity of his calling, and the necessity of bringing to bear upon it all the interest, intelligence and perseverance he is able to command.

Like many other enterprises it had a small beginning. The incentive was furnishcd by the farmers themselves. The plan of the course was worked out by a farmer, Mr. J. W. Spencer, known to thousands of school children as "Uncle John," and he was aided by the staff of the college of agriculture. The plan was and substantially is, to send to each member a lesson containing an elementary exposition of a principle which is fundamental to the success of some phase of farming. A supplement to each lesson is forwarded in the form of a "quiz". This examination sheet is to be filled out and returned to the college by the reader, to be there recorded and a value assigned.

The farmer deals with the soil. Its fertility represents his capital stock. It is his bank account. He draws on it wisely or unwisely according to the custom of his locality and his knowledge of the principles of good farming. In preparing the lessons it was natural that the soil and the methods of managing it should furnish a text for the first three lessons. Logically the animal and its intermediary—the plant—came in for consideration next. After disposing of these recognized fundamentals, the special types of farming, such as dairying and fruit growing have each formed distinct series in the course. There are, therefore, now three series, each consisting of six lessons, the last of which is in effect a review, in that it gives correct answers to the questions asked in the previous lessons.

The farmer fails on the observing, the planning and the experimenting sides. To strengthen this weakness the editors of the course endeavor to obtain in the answers to questions asked on the lessons, statements of farming difficulties peculiar to certain regions. A consideration of these troubles suggests the inauguration of experiments designed to illustrate fundamental principles in successful agriculture, or the best way to overcome fungus or insect parasites. The farmer is invited to coöperate. In this way he becomes an experimenter, an observer, a scientific farmer. When the farmer has learned to study his land, his plants and his animals as carefully as a financier studies the stock market he is on the high road to success. The course for men has achieved such practical success that a parallel course for women on the farm was organized the past winter. It has been joyfully received and 6,000 applications for membership have been recorded.

Is the movement appreciated? The best evidence is offered by the growth of the enterprise and the unsolicited testimony of interested readers. Beginning in 1897 with 1,500 readers the membership has grown rapidly until it has now reached a grand total of 2,700 correspondents. A great range of agricultural activity is touched. Farmers real, farmers prospective, farmers practical, and farmers theoretical are heard from. In these letters, as a member of the College staff remarked, there is an astonishing aggregation of fact, fun and philosophy. Here is one dealing in all three:

A FORLORN HOPE

"I am just past fifty years old, healthy but only weigh 110 lbs. Am a New York printer out of business, and too old to get steady work. They want a younger man; besides my eyes are giving out. The only thing left for me to do is to go 'backwards to Eden' and try to earn my living at farming in a small way. In pursuance of this plan I have leased a small place in New Jersey, twenty-seven acres with small house and dilapidated barn, cow shed and corn crib. I took possession February 1st, last. I have means enough to pay a year's rent at twelve dollars per month, buy a cow, three young pigs, fifty chickens, a horse and dog and some tools and seed and live for one year. After that it must support me and the housekeeper and fourteen-year-old boy, who will also have to go to school. You ask what are my special difficulties. Arn't these them? Special and general? There is no choice in the matter, it is this or the poor house, with a chance of this and the poor house at the end of the year. I *simply must make it succeed.* I shall make mistakes and if you care, or if it interests you, I will

report success or failure, so you can hold me out as a light house. I call the place Forlorn Hope —Last Ditch."

"KNOCKING FACTS INTO HIS HEAD"

"I enjoy the study for it is good sense and until the farmer knocks a few scientific facts into his head he will continue to lose more than he gains. I consider the way you go about helping the farmer is by far the best investment possible of the state's money. I admire your noble work and I want to study with you. Please send me the new studies as they come out and believe me to be."

APPRECIATIVE AND THANKFUL

"My dear Cornell: It pleases me very much indeed that you have not forgotten your delinquent Pennsylvania boy. You know I dropped out while my wife was so sick. She is once more getting well and I am glad. Anything from Cornell is always welcome here and in my blundering way I have endeavored to answer your questions. I hope to hear a speaker from Cornell somewhere this winter."

OUTSTRIPPING HIS NEIGHBORS

"I am a little dubious about the wisdom of further pursuing this Reading Course. It has helped me to become a better farmer than most of my neighbors; which in many cases has aroused their envy and hatred. I am fast losing friends; becoming isolated in consequence. My crime is, I am raising ten bushels of grain and three of potatoes to their one. If I should, in the near future, grow a fine orchard they might *mob* me."

HOW BULLETINS INCREASED CROPS

"The Reading Course has been a help to me the past summer in the way of raising crops. Through these lessons I have obtained 100 bushels of potatoes of saleable size from one-half acre of ground in spite of the unusually dry year. There is nothing that I can say to criticise or condemn. I am thankful to the state and to the college for placing these lessons in my reach."

HARD MANUAL LABOR DISCOURAGES NIGHT STUDY

"Kind friend, I must address you as such for you are a friend not only to myself but to all farmers. You have so kindly sent me your bulletins for a number of years, and they have helped me a great deal. I am ever so much obliged to you for sending me this last course. The other you sent me during the summer and it was quite a task to keep my mind on it during hard work, but I had almost finished it when you sent me this last Reading Course. I will finish it and return the same to you. Now would it be asking too much to send me another or rather the same you sent me, for a lady friend who owns a farm and is very much interested in farming. She takes an interest in all its branches."

AN AFFECTIONATE INTEREST

"I don't know how to address you, and there are lots of poor old broken-down farmers in the same boat, but I will call you Cornell so I will address you thus: Friend Cornell: I feel very much interested in your Reading Course. If you have got a pet name inform your readers. They are loyal and obey orders. Excuse us for not answering you according to your plans. We want to file all your matter, so that if our business does not drive us too hard we can refer to them in the future."

A PRACTICAL RESULT

"I am a truck gardener and greenhouse man and I consider your experiment work of vast importance. I should like to have you continue your bulletins. By using them I have become one of the most successful growers of egg plant in western New York."

A PRINTER TURNED FARMER

"While not a practical farmer, or directly connected with farming at present—being a printer —I am so much interested in agriculture and horticulture that I have purchased a tract of forty acres on Long Island, cherishing the hope that some day I will be in such circumstances as will enable me to leave the printing business and devote my time, with the aid of a practical and experienced assistant, to the cultivation of the said place. For that reason I wish to make application to enter the courses at Cornell, providing there is no objection on account of my not being engaged in farming at the present time."

DRUDGERY TRANSFORMED

"Although a Canadian farmer boy, you were kind enough to send me your Farmers' Reading Course. After reading the five lessons on the soil and the plant as I trudged up and down through the furrows, every stone, every lump of earth, every sandy knoll, every hollow, had a new interest. The day passed, the work was done and I had a new experience."

Is not this the key to the whole situation? Vivify a task by introducing the child's eternal "why?" and what was irksome becomes attractive; what was a labor becomes a recreation. Scientific education must be developed downward as well as upward. Its foundation should be laid in the farm home and the rural school. Correspondence courses in agriculture strive to repair defects of early education of the farmer with a view of placing him in full harmony with his surroundings.

MOUNT RAINIER FROM PUGET SOUND

THE WONDERFUL NORTHWEST

THE REGION ABOUT PUGET SOUND AND THE RAPID RISE OF CITIES THERE — WHERE OCEAN STEAMSHIPS LAND WITHIN SIGHT OF SNOW COVERED MOUNTAINS — OUR RAPIDLY GROWING TRADE WITH THE ORIENT

BY

H. A. STANLEY

ILLUSTRATED, EXCEPT WHERE OTHERWISE STATED, FROM PHOTOGRAPHS BY E. S. CURTIS

THE development of the Puget Sound country during the past quarter of a century has been most remarkable. Twenty-five years ago, few, if any of its towns and settlements were on the maps. It was but fifty-six years ago that Daniel Webster declared in Congress: "What do we want of this vast worthless area of shifting sands and whirlwinds of dust; of cactus and prairie dogs; a coast of 3,000 miles, rockbound, cheerless and uninviting, without a harbor on it?"

It was fifty-five years ago that the first settlement (Tumwater) was made on Puget Sound; forty-eight years ago that the first permanent settlers came to the vicinity of Seattle. It took Seattle three years to gain its first 150 inhabitants. Then followed an Indian war, and even that small population was reduced, slowly to grow again, until in 1861, it gained its first triumph—the then small school, dignified with the name of Territorial University. In 1875 it had several stores and sawmills and about 1,750 people; in 1890, 43,000. In 1900, Seattle claimed a population of 81,000, not including some actually adjoining suburbs, with at least 6,000 more. During this decade, too, the worst financial depression in the history of any new

AT THE ENTRANCE TO THE STRAITS

The United States Government will make this bay a harbor of refuge

AN INDIAN FAMILY
On the Sound near Seattle

country had afflicted not only Seattle, but all the Sound country. In the Tsuers river valley, back of Cape Flattery, not less than twenty claims and ranches were abandoned, many houses being left with furniture in them. For years things stood still or went backward in many portions of the Sound country, yet to-day Seattle and its environs have not less than 110,000 population, and the gain is so rapid that houses cannot be built fast enough to keep rents down to a reasonable figure.

What has caused this wonderful growth? Some will answer, the energy of the people. Others, with equal knowledge of conditions past and present, will give the credit solely to remarkable resources. Of course it is really a combination of both—energetic, keen, resolute business men; a territory with natural resources and commercial advantages richer and greater than almost any other on earth.

The people are from every part of the Union,

A RAILROAD SCENE IN SEATTLE
Where the tracks meet in the City

and they have confidence in themselves and one another. Reverses strike them; they are hoisted skyward by some unexpected petard like the great fire of 1889, but they land right side up and set to work, no matter what their age or condition, with all the confidence and cheerfulness in the world. A man may lose every dollar he has, but the next day will find him stirring about, setting new enterprises afoot, working like a horse, laughing at a good joke, and telling of the many adventures that have made his life jolly.

There is a citizen of Seattle, engaged in grading streets or building roads. His sons are running engines in some of the nearby mines or doing any other honest work they can find. All in that family are cheerful and apparently happy, although such a thing as a

THE RHODODENDRON
Washington's state flower

"spare dollar" is almost unknown to them; yet before the hard times of '93–5, they could have "cleaned up" a half million. They will be on top again if they live long enough.

Another old man, small, spare, keen-eyed, quiet, but frankly courteous, was with Kit Carson, and fought his way across the continent. His biography would read like a romance. He has made and lost three fortunes—the last six years ago. He never was cowardly enough to drink to drown trouble, and old as he is, he has a nerve like steel. There is probably not a thing on earth that that old man fears. He is confident that he will make another fortune, and that he will live to see Seattle the largest city on the Pacific coast.

These old-timers—there are a hundred of them in this vicinity—have that in them that

THE MARIME FALLS IN THE OLYMPIC MOUNTAINS

The heavy rainfall in these mountains, amounting to over 100 inches a year, feeds many beautiful cascades

THE BUILDING OF THE "NEBRASKA" AT SEATTLE

The bows of the battleship will be twenty feet higher than the three-story building marked by the cross. The torpedo boat *Rowan* is in the water at the right

would make a flower garden in the centre of Sahara. The present generation, too, are a resolute, practical lot. Seven out of ten can cook a meal before a camp fire, build a camp or a boat, or form a syndicate. They never talk vainly, but they make strong statements about the Sound country. Each is a self-made man, yet he does not worship his creator. There are probably 1,500 of them in Seattle, all worth from $5,000 to $500,000 each, and striving to get more. One well-known citizen of Seattle, during the recent hard times, mortgaged his home for $18,000 to pay taxes on vacant brush lots, which are to-day amply repaying his faith.

Best of all, they work like brothers. Recently, a little company of them happened to be assembled at the Chamber of Commerce, when the news came that the Moran Bros. Company must scale their bid on the battleship contract by $100,000. They subscribed $27,000 in fifteen minutes, and raised the other $73,000 in five days by subscriptions from all over the city, ranging from $25 to $5,000. Every one of those men will tell you, with pride shining in his eyes, how Robert Moran, during the Alaskan rush, was left, by the failure of a Pennsylvania and a New York transportation company with nearly three quarters of a million dollars worth of Yukon river steamers on his hands; how he looked about for men to take them north and sell them without finding any who cared to take the risk and responsibility; how he donned his working clothes, hired a convoy of two sea-going

Photographed by Lynn, Tacoma

ALONG THE BUSY WHARVES

Showing vessels engaged in the lumber trade, one of Tacoma's chief industries

SEATTLE FROM THE WATER-FRONT

tugs, and with that fleet of thirteen flat-bottomed river steamers set out across the Pacific and up through Bering sea; how everybody prophesied total loss and wondered for twice nine days over the outcome of this attempt; how he overcame all obstacles, showed his iron will, risked his life, got there and sold his boats for "big money."

The aristocracy of pluck and ability, of power to do better than his fellows under adverse circumstances, is the only aristocracy these men recognize. A "father's son" is but common clay, until he has won his spurs

A BICYCLE PATH
In the Country near Seattle

It is so in business. It is so in the professions. A leading professor in the state university, was a newsboy in the streets of Seattle twenty years ago. Who his father was few knew or cared. All know that the professor is a man of brains, modesty and industry.

An honest grocer is as good as a bank president. He and the magnate of finance call each other "Jehu" and "John," and go fishing or hunting together. What is true of the men, is equally true of the women. There are better common schools and more of them, there are more literary and dramatic

FOLIAGE ON THE CASCADE MOUNTAINS
Showing the huge leaves of the "Devil's Club," a shrub common on the western slopes of the range

societies, more theatres and clubs than in almost any other city of like population that can be named. This is not an excessively religious community, yet Seattle proper has sixty-five churches. There are 134 fraternal and benevolent societies, forty-eight newspapers, and other periodical publications.

A few years ago, a broken-down newspaper man came to the Sound region for health. He struck out for the woods and mountains; and a man whom he had never seen or heard

Photographed by Hester, Seattle

THE LARGEST LUMBER-MILL IN THE WORLD
Situated at Port Blakely, Washington

of before his arrival, left his business to take him seventy-five miles and introduce him to a mighty hunter in the foothills of the Olympics. That hunter took him into his 10x12 cabin, cheered him up, fed him well and took him hunting. He lived on beans and elk-meat for five months and gained thirty pounds. When he came back to Seattle,

By courtesy of Pacific Coast Lumber Journal

A GIANT STICK OF TIMBER
A log 150 feet long which will square to eighteen inches or more

a new acquaintance caused some of his friends to get up an evening's entertainment for him. Later, another new acquaintance took him as a guest to the young men's club of the leading church of the city. About him sat 200 stalwart, manly fellows. Their wives, sisters and sweethearts served the assembly with refreshments. A literary and musical programme was given in a homelike, social way. As a stranger, he was invited to say something. At no time an after-dinner speaker, he now felt somehow at home. Not knowing what else to say, he told them of what many knew best—life in the mountains. He waxed eloquent under their applause and talked forty-five minutes. As he concluded, the good pastor praised his effort. Everybody applauded. Then those people stood about him and sang several popular hymns such as he could join in, concluding with Auld Lang Syne. Then, for half an hour that guest held a levee. That man went east, but he came back to Seattle to live.

Webster called this region "a coast of 3,000 miles, rockbound, cheerless and uninviting, without a harbor on it." The Puget Sound country alone has as many good harbors as half the Atlantic seaboard. The little town of Port Angeles, of which the East scarce ever hears, probably has the best. Seattle's is nearly or quite as good. Then there are Port Orchard, Tacoma, Everett, Port Townsend, Port Blakely, Eagle Harbor, Port Madison, Port Ludlow, Port Gamble, Pleasant Harbor, Seabeek, Ballard, Holmes Harbor and a dozen more. Almost any of these will receive a battleship, yet some have not even a village or a post-office. Pleasant Harbor, on Hood's Canal, would furnish safe anchorage, for thirty *Oregons* or *Iowas*, and any one of them could enter at quarter, if not low, tide, yet there is not so much as a decent cabin on that beautiful and secluded body of water. There are many miles of water-front that will furnish depth for the deepest draft ocean-going vessels, 250 feet from shore. One famous admiral has declared he could tie to the trees. There is scarcely a sunken rock or reef in the entire Sound region. The shelter is perfect, the scenery sublimely grand. Almost anywhere in the Sound region, south of the straits, the shelter is safe for largest vessels in these harbors or out in the Sound.

By courtesy of Pacific Coast Lumber Journal

A TWELVE-FOOT FIR-TREE

And its destroyers

By courtesy of Pacific Coast Lumber Journal

A TYPICAL BIG TREE

Which is still growing

THE LONG SWEEP OF WHARVES

The waters of this vast Sound fairly teem with fish, clams and oysters, the latter capable of improvement. No less than ninety-five varieties of food-fish can be secured in the Sound and its vicinity, and the vastness of the cod-banks of the Pacific can as yet be only conjectured. They seem limitless.

The millions of acres of flat, swamp, valley and slope of all the Sound region was, twenty-five years ago, the most heavily timbered territory of any size in North America. It seems at present to be hardly touched. There are groves of larger trees in California, but these are of but small area. Probably no place on earth will average acre for acre the timber that the Puget Sound region can furnish. It is fir, cedar, spruce, hemlock and alder, as well as maple and other woods. Its Douglas fir—the most common variety—has been found superior to yellow pine and other woods heretofore used for car-building. It is now claimed that government tests show that it is better for ship-building, having greater horizontal strength than oak or Georgia pine, and superior lasting qualities. One big firm is now making heavy shipments of this fir to Germany for use in the warships of the Kaiser's new navy. The standing timber of the Puget Sound region is estimated at 114,000,000,000 feet. Only 30,000,000,000 feet have been cut during the past fifty years. The growth is very rapid, thirty years producing a fair-sized tree.

The agricultural area is as yet comparatively small, but once cleared, the best of this land is easy of cultivation and the yield is beyond belief. Every acre will not produce fifty or seventy bushels of wheat, but some will, and many will yield forty, which is double the average of other states. The tide lands of La Conner have been known to yield 130 bushels of oats to the acre, and the average is double that of any other portion of the United States. Three thousand pounds of hops have been grown on an acre in the Sound country, but that is extraordinary. An average of 1,500 pounds can be obtained, as compared with 700 pounds in eastern fields. Live stock needs nothing more than a shed to shield it from the rains, and a little fodder two months of the year. The dairying business is increasing about twenty-five per cent. per year.

The mines of the state, strange to say, have never been developed in proportion to their worth, although mining men are now awakening to their error, and are becoming aware of the riches so near at hand. It is now known that there are coal, silver, gold and other mining riches here, and the development is something hard to keep track of. One year ago a local authority declared that if the gold veins already uncovered in Washington are properly developed for five years they will produce $12,000,000 per annum, and keep it up indefinitely. Seattle has an assay office, which was opened in July, 1898, and which already ranks third in the United States, having received during the two and a half years of its operation between $40,000,000 and $50,000,000 worth of precious metal.

Many years ago Capt. Renton, a blind man, established a lumber mill on Blakely harbor, just across the bay from Seattle. That

AND SHIPPING AT SEATTLE

plant is to-day the largest saw-mill in the world. It has a capacity of 275,000 feet every ten hours, it runs night and day, and its annual output is from 100,000,000 to 125,000,000 feet. It owns a large fleet of ships, it is constantly building more at its own yards, it loads them at its own wharves and sends its product to all parts of the world.

Robert Moran, scarcely yet in middle life, is perhaps the most notable case of individual achievement in the northwest. Born in New York, his childhood was hard and toilsome. At the age of fourteen he had left home, gone to Cincinnati and was doing a man's heavy work in the great rolling mills. Twelve hours over red-hot iron and before the heat of blazing furnaces was not enough for this ambitious youth. He studied long hours after others slept. In 1874 he packed his few possessions and went to New York, there to pay his last cent for passage to San Francisco, via Panama. Before he reached San Francisco, an unknown philanthropist discovered that this boy of seventeen was "broke" and after urging him to go on to Seattle, where the great city of the Pacific coast was one day to be, paid his fare. When Robert Moran reached Seattle, early in '75, he had not a penny. His education was such as a boy may gain who has worked in a rolling mill from the day he was old enough to run about. His first work in Seattle was performed for "big Bill Gross," a negro restaurant keeper, to pay for food. Later he was hired as cook in a logging camp, and as he had never cooked he was "fired" for the first and last time in his life. Gaining a job as fireman on a Sound steamer he bought books and a drawing board and when he was not working he studied diligently. He was carried, as assistant fireman on the old "Cassiaire," to the Sticksen river and there within a year, by his superior nerve and coolness in times of danger, he was made chief engineer and pilot. Old timers tell how he stood seventy-two hours at his post, eating such food as was brought to him.

The first money he could save went east, and in due time his mother, his sisters and his brothers joined him in Seattle, and within ten years Moran Bros. had the best machine shop in the northwest. There were many triumphs during those ten years, notable among them was his first contract from the government, for the construction of great pumps at the then embryonic navy yard at Port Orchard. The

A GOLD SHIPMENT OF $4,500,000
Received at Seattle from Cape Nome in 1900

SORTING ORE
In the shed at the "45 Consolidated" mine

officials passed him by, but he sought and impressed them with his force, went home, drafted and designed all night and was on hand next day with figures that gained him $110,000 worth of work and the admiration of every man he met. Not a figure or design of his was changed and he was on his feet.

The great fire of 1889, when $12,000,000 worth of Seattle property went back to the elements, brought out another trait in his character. He had meanwhile been made mayor, and but a few days before he had collected thousands of dollars for the Johnstown sufferers. On June 6, 1889, he stood at his post in the center of the city fighting fire when word came that his own plant could be saved if he would go down there and direct operations. He refused. His duty was in the center of the city and there he remained while everything he owned was in flames. He was everywhere that night. He directed and controlled excited men. He preserved order and closed every saloon. When he was not obeyed he smashed in liquor casks and destroyed bar-rooms. At four o'clock of the

ENTRANCE TO TUNNEL OF THE "45 CONSOLIDATED" MINE IN THE CASCADE MOUNTAINS
In the few years since this photograph was made the lean-to has been demolished and there is to-day a three-story building at this place I

INDIAN WOMEN AT WORK IN A HOP FIELD

"Three thousand pounds of hops have been grown on an acre"

IN MADRONA PARK, SEATTLE

A THEATRE IN MADISON PARK, SEATTLE

morning of June 7th, hatless, coatless, looking more like a black than a white man, he stood on the ruins of his dearly loved plant, chewed his cigar and reflected. Within an hour he had men at work building other foundations and at noon was back in the city presiding over a meeting that sent the thousands so sorely needed in Seattle to Johnstown. That was his spirit and the spirit of Seattle. Without a dollar in the world he managed to rebuild that plant and the brothers had so far prospered in 1896 as to build the great torpedo boat *Rowan* and to exceed the speed required. What wonder they succeeded? Nothing could keep them down. The man who reached the Pacific coast, a penniless boy, hardly able to read and write, is to-day a famous mathematician, and probably not a man living has a better knowledge of his profession.

The situation of Seattle is superior to that of all the other cities of western Washington. The weather is never very cold nor is it ever very hot. The extreme temperature of winter is about eighteen or twenty degrees and of summer eighty-five to ninety degrees. The death rate is lower than that in any other city in the United States.

Looking southward, Mount Rainier, the loftiest dome of ice and snow in all the States is first seen. Rising apparently from the tide-flats to a height of nearly three miles, its dazzling brilliancy causes the stranger to stand amazed. From its very base apparently, winds out a sparkling stream, to end in the blue of the great bay. To the west, a cape extends out into the Sound, looking like the battlements and ruins of some old-world castle. Stretching northward is Bainbridge Island. Between it and the mainland, winds a narrow but deep channel to Port Orchard's circular

Photographed by French, Tacoma

A VIEW OF TACOMA

Showing the business section of the city

A SEATTLE BUSINESS STREET IN 1880

The signs, the wooden buildings and the leisurely people tell their own story

THE SAME STREET TO-DAY

The signs and buildings have changed. The street is paved, there are trolley lines, electric lights, telegraph and telephone wires—and no one is standing still

Photographed by French, Tacoma

PRODUCTS FROM THE FARMING REGIONS FOR THE ORIENT

and land-locked lagoon, where is the Bremerton United States navy yard with the largest and best dry-dock on the Pacific coast and one of the largest in the world.

At the extreme northwestern point of Seattle, is Magnolia Bluff, where the United States government has acquired one thousand acres and where extensive fortifications and heavy guns have been placed. Two regiments will be stationed here at all times and the transportation of men, horses, provisions, fodder and munitions of war will be, as now, enormous. Still farther north rises mighty Mount Baker, big brother and neighbor of the ice-mantled Monte Cristos of the Cascade range. Stretching southward, to Mount Rainier, a wall of ice, snow and rock, between the sand country and the Eastern world are the Cascades, a barrier no longer because of two great trans-continental tunnels. Fifty miles distant, these mountains are yet so near that their glaciers, waterfalls and snow fields sparkle in the sunlight.

Photographed by Lynn, Tacoma

AT TACOMA

When President James J. Hill of the Great Northern R. R. proposed terminating his transcontinental line in Seattle and establishing the line of Oriental steamers, he was welcomed, promised support, and asked to pay a fair price for what he got in the way of land and privileges. He came and has put millions into yards, docks and elevators. His Cascade tunnel, completed but a few months ago, is one of the costliest and longest tunnels in the world. He declares in his public speeches that one acre of Washington timber is more valuable and furnishes more valuable freight for shipment than an acre of wheat with an annual yield of twenty-five bushels for one hundred years; that Seattle is nearer the Orient and has advantages over all Pacific ports; that it will have a population of half a million within fifteen years. As an evidence of his faith, he will add to his fleet, and is now building two vessels that will carry more than one thousand car-loads of freight each. They will

MOUNT RAINIER

This ice-capped mountain, 14,529 feet high, is eighty miles south of Seattle, from which it is plainly visible

SPOKANE COUNTY COURT HOUSE *Photographed by Libby, Spokane*

LOWER FALLS, SPOKANE *Photographed by Libby, Spokane*

be among the largest craft afloat and will begin to run in the autumn.

Twenty-five years ago, Seattle had not a mile of street railway; to-day it has nearly one hundred miles. Within a year, it has tapped the snow-fed waters of a mountain river, twenty-eight and a half miles to the east and now has a water supply of twenty-two million gallons a day from this source. A falls nineteen miles distant furnishes an average of 50,000 horse power. The drop of these falls is 286 feet or 126 feet higher than Niagara.

A few years ago the agitation for a government ship canal from salt water to Lake Washington was commenced and preliminary work is now under way.

For years the Port Orchard dry dock was derided as "a place so small and so out of the way that no enemy could ever find it." Investigation was made. Not only the most commodious and best dry dock on the Pacific coast, but the best natural site for a navy yard was disclosed. The work now going on there is stupendous. Vast machine shops and repair and construction plants are springing up, and at least 1,000 men are directly or indirectly employed. The dry dock is 650 feet long, 39 deep, 67 in width at the bottom and 130 at the top. Its original cost was $600,000.

When the Alaska-Klondike discoveries were made, Seattle merchants ordered goods in a way that amazed those from whom they purchased. Failures were predicted, but Seattle being prepared, secured two-thirds of all the Alaska trade and kept it. Seattle will always be the gateway to our Alaskan possessions, the importance of which few people east of the Mississippi realize. Captain Healy, for years general manager of the greatest of the Alaskan trading companies predicted while on a visit to Seattle in February, that within twenty-five years Alaska and the Klondike would produce more actual mineral wealth than the entire world has contributed during the last quarter of a century; that a railway across Behring Strait connecting New York with St. Petersburg will be a reality and that construction work will be commenced sometime during 1902. No man alive knows more about the resources of Alaska than Captain Healy. For twenty years he has been studying them and has for the last five years had an army of prospectors and employees in his service. Not less than 30,000 Alaskan bound people pass to or from Alaska through Seattle every year. The city's transient population for months at a time averages 5,000 to 7,000, yet this poulation does not enter on the census reports.

Starting in a small way fifteen years ago Seattle began building up a public library. It was moved from place to place as it grew, until on the night of January 1, 1901, it was destroyed by fire. The next morning the Library Commission telegraphed to Andrew Carnegie. They asked for $200,000. Mr. Carnegie answered—"Atlanta has more population. I gave her $125,000." They answered: "Increase population 1890–1900, Atlanta 37 per cent.; Seattle 88. Seattle's population all white and all readers. Actual revenue for 1900, $30,000. Home circulation 1900, over 150,000 volumes. Will need in five years $250,000 building. Will guarantee annual maintenance $50,000." Mr. Carnegie's reply was: "I like your pluck. You may build to cost $200,000 which I will provide."

In 1900 the value of Seattle's manufactured products is claimed to have been $50,000,000; 19,000 men were employed, of whom 1,150 were carpenters, 1,375 shipbuilders and 14,500 factory and mill operatives. Its government transport supply business during 1900 was over $4,000,000, or more than that of any other port in the United States, and its bank clearances were $130,500,000.

There are other cities in the northwest that rival and even have points of superiority over Seattle. Tacoma, for instance, is even more beautiful from the water-front, is on the average better built, and is astonishingly progressive. Its natural advantages are equal to those of any other city on the sound and in some respects are superior. Its achievements will astonish the average eastern man. Here is one—1,100 population in 1880 and at least 45,000 in 1901!

Many people doing business in Seattle prefer to reside in Tacoma, and so great is the traffic between the two cities that despite the fact that a railway and six fast boats make from one to four round trips a day each, an electric railway is now being built. The townsite is more level and reaches the water more attractively than that of most other sound cities. The streets are consequently more level, and so generously and wisely is the town laid out, that it has not a street less than 80 feet wide, while it has several noble avenues 100 feet in width. Many homes are surrounded by

beautiful lawns and flower gardens. It has one park of thirty-five acres in the very centre of the city, adorned with flowers, arbors and statuary, and five miles from the city's centre is another park, of 1,000 acres.

The best residence portion of the city is on a plateau, elevated about 200 feet above the green waters of the beautiful harbor, and from any portion of this section may be seen stretches of gleaming water losing themselves among the wooded islands, beaches, white, gray and brown, and frowning headlands. The Olympics stretch along to the west, rugged,

THE PUGET SOUND COUNTRY

snow-flecked and mysterious, while to the east rises Rainier—here known as "Mt. Tacoma."

You may gain an idea that here is a city of the dilletante; that they are largely "remittance people from the east." Strange to say, Tacoma long ago acquired the name of "dinner-pail town" as well as that other name of "æsthetic crank colony." Why? Because of its manufacturers. Here in greater numbers, perhaps, than in any other city of its size in the northwest, can be found the intelligent workingman. Let us see what it is doing in an industrial way.

Tacoma is a lumber town—all Puget Sound cities are. Of course, it has many mills. The St. Paul and Tacoma Mill Co's plant, having a capacity of 87,000,000 feet, with improvements and enlargements now under way, will be next year the largest lumber mill in the world, with a yearly capacity of 140,000,000 feet. There are other mills nearly as large, great box factories, etc. Two hundred and forty-eight industries in all, employing 6,000 men and women. The city claims to have the largest factory pay roll on the coast excepting San Francisco.

Tacoma's greatest strength, however, lies in her enormous ocean commerce. It was in 1868 that the first full cargo was taken from Tacoma, a small schooner load of lumber from the old Hansen Mill, and shipped to San Francisco. To-day, with the recent addition of the "Glen" line to London, via the Orient and the Suez Canal, something over twenty steamers ply regularly between the Port of Tacoma and the Orient alone. Tacoma's exports and imports for the quarter ending March 25, 1901, were $4,130,188. This city is the wheat port for the State of Washington, with warehouses and elevators 4,000 feet in length, with splendid wharves and the best of facilities for the carrying on of her growing trade. Here also are large coal bunkers, operated by electricity, which can deliver coal on board ship at the rate of 1,000 tons per hour. Over 600,000 tons of coal were shipped last year for Pacific Coast and Pacific Ocean ports. Tacoma alone now ships more flour to the Orient than China imported from all points five years ago. The largest smelting plant of the Northwest is located here, and gives employment to 250 men.

The city has tributary to it one of the richest of farming regions. It has, from the many ramifications of the Sound, a large "mosquito fleet," by which every conceivable product of land and water of this zone is constantly brought in and sent out. Its vessel clearances increased twenty-five per cent. last year. It has twenty public schools, and seventy-one churches. Its library, like that of many western cities is its pride and Andrew Carnegie has just given the city $75,000 to build a suitable home for it.

The third city of its state, and for that matter of the extreme northwest, is Spokane. We used to call it "Spokane Falls" a few years ago, and we knew little of it. We had a hazy idea of a frontier village straggling along a roaring river, with rocks, moun-

tains and arid plains stretching away to the four points of the compass. To-day it is a city with a population of 40,000, and one of the richest in all the northwest. Its rise is due first, to the mines near it; next, to a vast water privilege of 32,000 horse-power, which any factory may lease from by paying $10 per horse-power per year; and last, though by no means least, to a rich farming and lumbering territory of which Spokane is the natural centre.

What do you think of a jackass earning $76,000, in a single afternoon for its owners? Two men, Phil O'Rourke and N. S. Kellogg, were "grub staked" by Cooper & Peck in '85 and the jackass was sent along to carry the load. Kellogg found samples in the south fork of the Cœur d'Alene river and took them to Cooper & Peck, who told him they were worthless. The donkey, meanwhile, had been turned loose, but Kellogg went back, met O'Rourke and, finding the donkey, packed their belongings on its back. By chance, while hunting the donkey, they located the Bunker Hill mine, put up a notice in Kellogg's name and attached that of O'Rourke as a witness. Later, they concluded that if it became known that they had used Cooper & Peck's mule, there might be trouble, so they tore down the first location notice, put up another in O'Rourke's name with Kellogg as witness and told of their find. Cooper & Peck found the first notice where it had been thrown, brought suit for rights guaranteed by grub-stake and were met by the contention that Kellogg only had been staked; O'Rourke located and O'Rourke owned the mine. Somewhat later Judge Norman Black, of the Northern District of Idaho, rendered the following unique decision:—"This Court is of the opinion that the Bunker Hill mine was discovered by the jackass, Phil O'Rourke, and N. S. Kellogg; and as the jackass is the property of the plaintiffs—Cooper & Peck, they are entitled to a half interest in the Bunker Hill and a quarter interest in the Sullivan claims." The donkey was sent by the grateful Kellogg to Forest Grove, Oregon, where for five years, the remainder of the ass's life, a man was paid $50 a month to care for him. That mine, or those two claims were later sold for $4,000,000 and are giving employment to four hundred men today.

There are a score of good mines in the vicinity of Spokane and others to be discovered. No wonder Spokane is the home of millionaire mining kings, and that money for any enterprise is easy to get. It has developed the lumbering and farming resources and these last are marvellously rich, as any visitor of that region can attest.

The sights that are seen at a Spokane fair would give the average eastern farmer subjects for large stories all the rest of his days and should he go back home and state exactly what he had seen, he would be tendered the belt as champion liar in all his district. Spokane is mistress of a farming and mining region four hundred miles in length and breadth. Like the mining, the farming region is divided into districts with specialties. Adams, Lincoln and Spokane counties are famed for their wheat. Spokane raises very fine root crops, as does also the Yakima region. Yakima peaches are as much ahead of Delawares both in size and flavor as are Puget sound cherries, prunes, plums and apricots superior to the eastern varieties. Whitman county apples have the size of the Oregon fruit that so astonished visitors at the Chicago exposition and a flavor that is equal to any Rhode Island can produce. Much of eastern Washington and much of northern Idaho was arid, but irrigation systems are putting out a vast network of ditches everywhere, and wherever water and seed strike that wonderful soil the production is beyond belief. More than that, as the farmers say: "we control the moisture. We have it when we want it, and we are not compelled to have it when we don't want it."

Everett is the next city of importance in this rich territory of the extreme northwest. It is an industrial city of 12,000 population—not a boom mining town by any means, but a solid manufacturing city of brick buildings, graded streets, vast wharves, mills, factories and railway yards, springing from the woods in a decade—a decade, too, that has recorded the worst trade depression this nation has ever known. Tacoma is twenty-eight miles south of Seattle, Everett thirty miles north, and each of the three claims a magnificent harbor. There is rivalry of all sorts between the three and each has its advantages over the others.

All are wonderful cities; but for remarkable growth, and solid growth, too, Everett is in many ways, though the smallest, yet the most wonderful. Ten years ago there were not a half-dozen families of white people on the present site of Everett. It took some three or

four of these years for it to arrive at the dignity of a village. Then the ball commenced rolling and at every revolution, the accumulation of wealth, population and business was tremendous.

Everett's harbor is almost perfect and will be entirely so when the government has expended the $3,000,000 now planned, for harbor improvements. All the lumber and other great bulk of products can be shipped by water at the least possible expense, for the water-way is open to the Pacific and Everett is nearer than either of the other two cities it rivals.

Then there are the mines. That famous mineral belt, comprising the Monte Cristo, Great Lake, Silver Creek, Troublesome, Sultan, Stillaguamish and North Fork district, is twenty miles wide, thirty-six miles long—and right at Everett's back door. It has a railway system that Rockefeller put through. It has a large smelter and refinery that this system supplies, although the plant draws from all over the northwest. James J. Hill and his Great Northern are doing much for the city. Three hundred men are laying forty-five miles of terminal track there now. The Great Northern is putting in round-houses and repair shops, and the Northern Pacific is jumping in for its share of present and prospective traffic.

The young city built 500 new residences last year; the monthly pay roll of its industries amounts to $150,000; 2,500 men are employed in its manufactories; it has an electric light system, twelve miles of new sewers, a modern electric street car system, schools, newspapers, churches, a theatre and a fine hospital. Only ten years out of the woods and all this growth from nothing during a panic decade! What will not the next ten years show?

Farther north, along the coast, back of it and on the beautiful islands, are Whatcom, Fairhaven, Sedro-Wooley, Mount Vernon, Anacortes and many other prosperous and growing villages, of which two or three at least, on Bellingham bay, should be consolidated into one city.

There are harbors everywhere. There is the richest farming region in the United States. Think of 140 bushels of oats on an acre of LaConner flats, with straw in proportion. Think of a land of fruits and flowers, enormously wooded and well watered, a land where malaria is unknown, a fine stock and dairy country and fish,—well, all the world knows of the canneries of this region. Go out there some time and see tons of great salmon taken out at a single draft. See two or three Scandinavian fishermen-farmers, their pink-sterned boat made fast beside some cannery wharf, while its owners, hats and coats off, are busy with pitchforks throwing great salmon in at the cannery door. The fishing schooners look as if they came from abroad, and though their tackles take in vast quantities of halibut, sole, smelt, mackerel and cod, you are not so impressed with the wealth of the waters as you are when you see those pitchforks going. Up in Island county the rancher has his boat, just as an eastern farmer has his wagon, and from ten acres, together with the waters round about, he gets as good a living and more clear money than the eastern farmer gets from seventy-five acres. He does not work as hard, he sees and enjoys more in one year, has a greater variety of food, and gets more solid comfort than an eastern farmer does in a lifetime.

The same is true toward Port Angeles and Dungeness, and there they have even larger hopes. Port Angeles confidently expects to be the second, possibly the first city in the Sound country, and so she may be some day, for she has the harbor, the timber at her back, the minerals, and the richest of land and waters all about her. A railway around the peninsular is being built this year, and prosperity has come to everybody out that way. Such riches as lie there awaiting development the eastern world scarcely yet knows of.

Indeed, the expansion of the Sound country and its great inland empire has as yet hardly begun. Its development must be rapid for its natural products are enormous, and the world wants them. Such a wealth of timber, minerals, marble, granite, sandstone, limestone, brick clay, glass material, bark for tanning, and a hundred other things that cannot be found elsewhere. The Orient is 500 miles nearer than to southern ports, Alaska is nearly 1,000 miles nearer, and the transcontinental lines are here. There is gathering here a cosmopolitan people, characterized by enterprise coupled with cool judgment. Here in the Sound region has been during the past twenty-five years, here and in Alaska and the Orient will be during the next twenty-five years such achievement as shall render millions prosperous and thousands wealthy.

MUNICIPAL OWNERSHIP

HOW GLASGOW AND LONDON HAVE BECOME LANDLORDS AND HOUSED THE POOR—MANY GERMAN AND ENGLISH CITIES OWN THEIR STREET RAILWAYS, LIGHT THEIR STREETS, INSURE THEIR BUILDINGS—SUCCESSFUL MUNICIPAL TELEPHONE SERVICE IN NORWAY—BEING ESTABLISHED IN ENGLAND

BY

JOHN MARTIN

THE subject of municipal ownership of street railways, lighting plants and the like presses with increasing earnestness. At Chicago the mayoralty election was fought on the question of street railway franchises. At St. Louis both candidates made the exaction of honest compensation for city franchises an important part of their programme. At Cleveland a promise of three-cent fares on street railways was the main recommendation of Mr. Tom Johnson, who was elected. At Toledo Mayor Jones, well known for his hostility to private ownership, was again elected; and at Detroit so popular have been Mr. Pingree's efforts to obtain city ownership that hostile legislators even threatened to pass an act to prevent him running again for mayor.

The experience of foreign cities must prove valuable. What Americans are now discussing, Europeans have long practised; a change, from private to public management, the mere proposal of which gives rise here to bitter political struggle, has often been accomplished in Europe as a simple matter of business. Things dubbed "impossible" have been achieved and methods styled "impractical" adopted.

HOUSING THE POOR.

When Glasgow philanthropists had found it impossible by private action to clear the fever-breeding slums they resolved to use the powers of the city government. The Town Council bought eighty-eight acres of densely overcrowded, unsanitary property, full of narrow wynds and closes, the refuge of criminals, the nursery of vice. It has demolished the old dwellings and laid out wide streets which are lined with municipal model tenements. Altogether over $1,490,000 has been expended in the erection of dwelling houses, and new blocks are now going up in a suburb to accommodate the "poorer classes," with two-roomed apartments at $3.25 a month. The buildings are self-supporting so that while the 7,000 tenants make no demand on the taxpayer, through the use of the city credit they secure better rooms than private enterprise offers for the same money.

For the nomadic classes who are a public menace when herded in ill-regulated lodging houses, the Council built seven establishments which have always been full at seven and nine cents a night. With ample baths, with clean, well-aired rooms and occasional entertainments by visitors, the lodgers are so comfortable that many have yielded to the temptation to become respectable. Some have occupied the same room for several years. The enterprise pays five per cent. on the investment.

In London, as in Glasgow, the first efforts to cope with unsanitary, over-peopled, dangerous dwellings was made by private companies who combined philanthropy with five per cent. profits. Much of their work deserves high praise, as does the work of the City and Suburban Homes Company in New York. The proof that decent homes for the poor could be made to pay was itself a great gain. But less scrupulous imitators of the Peabody Trust, the Guinness Trust and the rest, put up block buildings, alleged "model dwellings" which became "model slums." When investigation showed that only one-sixth of these tenements, occupied by 200,000 persons, had the light and air space, front and back, which the present building laws require, the London County Council decided that private effort alone was not enough.

By Act of Parliament, the Council was required to deal with areas that had become a

public menace. Its housing policy began to develop. In Bethnal Green it has carried through the largest clearance and re-building scheme ever attempted by a municipality. This area was formally opened by the Prince of Wales in March, 1900, and houses 5,380 people in airy, well-lighted apartments. A small garden, raised in terraces and capped with a band-stand, occupies the centre; and wide streets lined with trees radiate from it. Every room in the dwelling gets light and air direct from the outside; baths and laundries are provided for the tenants and—there are no vacancies. Altogether, the Council has dwellings completed or in course of erection for 31,000 people.

Last year it decided that to relieve overcrowding it must open up new sites in the suburbs.

Since, the Council has acquired land for no less than the actual creation of two *cities*, one in the south of London at Tooting and the other in the north at Wood Green. The plans for these are drawn and show that on the former 5,800 persons will reside and on the latter 42,500. At Wood Green, where $7,500,000 will be invested, a space will be left in the centre for public buildings (a library is already promised by Mr. Passmore Edwards) and a park will be laid out at the edge of the estate where a little stream winds through it. This will be a veritable Garden City without a single unsanitary room, with no private landlord, with security of possession for the tenants, and all unearned increment returned to the whole community; a city self-supporting from the first and likely to yield large revenues ultimately to the public landlord. The inhabitants will enjoy self government. They will neither be debauched by charity or oppressed by rackrents. The advantage to them will be to have a model landlord in a model city; the advantage to the general taxpayer will be the creation of a municipal estate without cost to him; and the advantage to the whole community will lie in some relief to overcrowding.

Berlin is suffering also from a dearth of good houses for work people. Its council is encouraging a housing fund to which citizens are asked to contribute, in addition to the quarter million dollars which the municipality has subscribed. From this fund the magistracy relieves the owner from laying down new streets where small houses are built. Whenever municipal land is sold a certain number of houses for working people must be built on it, and the municipality will sell land at cost price to builders for the erection of workmen's dwellings. Similar remedies proved ineffective in London fifteen years ago. It will be shown by experiment whether they are sufficient in Berlin.

STREET RAILWAYS.

Berlin and Vienna have a government by the rich with a slight infusion of democracy. In each place the highest taxpayers, who contribute two-thirds of the taxes, also elect two-thirds of the Council. Three-fourths of the members of the municipal Assembly of Berlin are house proprietors. These undemocratic governments, free from all taint of demagogy have shown how productive city franchises can be made.

In Berlin the company is required to grant a ten-hour day to its employees, to provide waiting-rooms properly warmed and lighted, and, from January, 1901, to fix a uniform fare of 2.38 cents for the whole length of the line both within and without the city. The city receives 8 per cent. of the gross profits plus half the net profits over 12 per cent. on old capital and 6 per cent. on new capital. At the end of the year 1919 the lines and rolling stock will become city property. These terms are drastic indeed; yet, the citizens are not satisfied, and additional lines are now planned.

In Vienna the company is required to submit to the control of the city as to the design of the cars and the advertisements on them, the time-table, the provision of waiting-rooms, the opening of new routes, and the regulations for the laborers. It must pave the streets in a track-zone of defined width, clean the snow from gutter to gutter, and allow the municipality to use the line for public purposes. Fares are fixed on the zone system at two and a half cents for one or two sections and five cents for three or four sections, with transfers. During the "building years" the company agrees to pay the city annually a sum rising from $125,000 in 1899 to $320,000 in 1903. Afterward the rent will be from 9 to 15 per cent. of the gross receipts according to the amount, in addition to half of all the net profits over 7 per cent. Of course the books and documents may be inspected at any time by the proper public officers. These conditions and payments are onerous in comparison with

the terms so far granted in the United States. But the aristocratic fathers of Vienna exact much more. At its option the city may take over the entire system in January, 1914, or in January, 1920, but, at the end of 1925 the body of the road and the street electrical equipment complete will become public property without compensation, the other machinery of all kinds pertaining to the system being bought at a price fixed by arbitration. Plainly an aristocracy can give lessons to a democracy in making a bargain.

In Paris, though the central government forbade the city to operate the municipal subway which was opened in time for the exhibition last year, the conditions secured from the company are creditable to the business skill of the officials. First and second class fares of three and six cents are to be charged and one-third of the gross receipts paid to the city—a rent likely to return fully five per cent. on the investment. For the laborers an annual holiday of ten days on full pay is granted and a sick and accident fund is established to which the leasing company pays three times as much as the men. After thirty-five years the lease will revert to the city and the rolling stock will be purchased at a valuation.

After vainly trying to force improved labor clauses on the corporation that leased its lines, Glasgow, in 1894, determined to operate them itself. It offered to purchase the old equipment on condition that the displaced company would not start a rival line. The company declined, and the city provided new cars, stables and horses. When the competing omnibuses appeared the canny Scots declared that they preferred to ride in their own cars and they mocked the empty 'buses as they rattled by. The company's conveyances were withdrawn. The Council reduced the hours of the drivers, conductors, and others to ten a day, granted one day's rest in seven (a movable Sabbath, formerly denied by the unco' guid directors) and established an improved schedule of wages. They have reduced fares thirty-three per cent. and given one cent rides for short distances—a boon highly appreciated by people with small incomes. In the last financial year, after providing for all working expenses, interest on bonds, ample depreciation and a sinking fund which will wipe out the capital account in thirty-three years, they had a disposable balance of $232,800.

The London Council has secured as good results on even shorter trial. On January 1st, 1899, it commenced the direct working of practically all the street railways ("trams" as the English call them) south of the Thames which it had purchased from the company on terms fixed by arbitration. Like Glasgow it has established a ten-hour day and a six-day week for employees. It has raised wages to an amount in total, including the cost of the ten-hour day, of $120,000 per annum. It has started an all-night service of great value to the public and has reduced fares so far that forty-four per cent. of the passengers pay one cent, forty-three per cent. pay two cents and only one per cent. pay over four cents. To the consumers this reduction of fares secures a saving of $97,500 and yet the Council last year, after paying all charges for working, for interest, for depreciation, and for sinking fund, had a net balance of $274,000. The Council is now installing electric traction, the completion of which means making two cents the maximum fare, the one cent fare distances being retained for weary people with very slender purses. So much better are these results than are those derived from the lines on the north of the Thames which were leased to the old company from 1897 to 1910, that steps are now being taken to purchase the unexpired term of the lease, and to extend public working to all parts of the city. This is the more important as the northern lines will be extended to the new model city at Wood Green.

The municipal operation of street railways at Sheffield, Liverpool, Nottingham, Leeds and other British cities has meant, likewise, better conditions for the employees, reduced fares, and substantial net profits.

GAS AND ELECTRIC LIGHT

Outside of London, only five or six large towns in Great Britain are without municipal gas-works, and a majority of the exceptions have started electric light plants. Throughout the country municipal gas is sold at ten per cent. less than corporation gas, and the quality is better. The smaller price represents $3,300,000 a year to the consumers in addition to the annual net profits, which help to pay for schools, parks, concerts, etc.

Berlin and 374 other cities in Germany own their own gas-works. Wherever it has been tried the people are well satisfied.

Progressive cities in the old world are running their own electric lighting plants also.

In London, the district of Shoreditch, a working-class quarter without any wealthy streets, sells the cheapest electric light in the metropolis, and made a profit last year of $35,000 after paying all charges. Islington, Hammersmith and St. Pancras have successful municipal works, and eight other districts have plants in course of construction. In a short time most of London will be lighted by municipal electricity.

Throughout Great Britain electricity for light and power is fast becoming one of the leading municipal industries of the country. Its growth has been phenomenal. At the end of 1900, 198 works were in operation in cities, 130 of them being under municipal management and 68 in private hands. Out of 212 institutions in course of construction, 99 belonged to public bodies, while 113 others had authority from parliament to establish plants.

MUNICIPAL FIRE INSURANCE

One of the latest projects of British cities is the insurance by themselves of their corporate property. As fire brigades improve insurance risks become lighter to the companies. Statistics show that the amount paid by British city governments during a long period has been several times as much as the amount received for fire losses. Therefore the London School Board has formed its own fund by accumulating premiums formerly paid to a company. For special risks it still uses the Insurance Corporations. In fifteen years, by this method of self-insurance, it saved a sufficient fund to insure its property permanently without further contributions.

So striking has been the economy where this system has been tried that Glasgow, Nottingham, Manchester, Birmingham and other cities in Great Britain, are now moving in the same direction.

In Berlin the system has gone much farther. There all the buildings are compulsorily insured at a valuation made by city officials. Every year the premium rate is fixed just to cover the cost, and is collected as a tax. Stringent building laws and relentless administration in Berlin reduce fire risks, and enable the city to be secure with a fire brigade which America would consider hopelessly slow and ill-equipped. Switzerland has a system of cantonal insurance against fire, compulsory in a few cases, and covering risks of over $160,000,000. Better attend to both prevention and insurance ourselves, these cities have said, than rely upon doubtful competition to reduce rates as we improve preventives.

MUNICIPAL TELEPHONES

Trondjem, the third city of Norway (30,000 inhabitants), is the banner town in respect to municipal telephones. The town builds all lines itself, supplies the instruments, and maintains the system for a charge of $16.65 per year for a business place, and half as much for a private house when within a mile of the central station. For every 100 metres (108 yards) beyond, an addition of $1.37 is made. Switzerland, Austria, Belgium and France manage their telephones as a national service in connection with the post-office, and therefore leave no room and no desire for separate city action. But in England, where the National Telephone Company has a license from the post-office, which does not expire till 1911, a Parliamentary Committee reported in 1899 that the service in the great cities could be best improved and cheapened by the establishment of municipal systems. Glasgow, Brighton, Eastbourne and other towns are now constructing their equipment, and this year Tunbridge Wells, an inland watering place, prosperous but less fashionable than 100 years ago, has taken the lead by opening its municipal service.

In all these cases of drastic change and civic experiment it is remarkable that the active agents have not been revolutionary agitators, eager to upset society and inaugurate a new era ; but steady-going, long-headed business men of good standing.

The British cities are ruled by the same men who conduct the largest industrial operations in them, men who are financially honest and display their civic loyalty by getting the same advantage for the community as they would get for themselves. So far as the measures are socialistic they were carried in spite of that adjective and by the weight of their economic advantage. Not theoretical perfection but practical benefit was sought. Therefore, as I have shown, the pioneer activities profit the tax-payer, the consumer and the employee alike. Business not charity is stamped on them. Their chief point of interest is their demonstration of the ability of a city to manage revenue-producing services so as to secure for all that advantage which, under private management, goes to a few.

THE EDUCATION OF PR

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RATION FOR OTHER PROFESSIONS — AN INVES

BY

THE REV. S. D. McCONNE

FORTY years ago one would have denied that the clergy were the best educated class of men in this country. In the Presbyterian, the Episcopal, and the Congregational churches, the minister was almost always a college graduate, was a man of literary habits, knew something of science and history, and was in general easily in advance of the people among whom he lived in education and general information. Among Roman Catholics, Methodists and Baptists, while the clergy were as a rule not liberally educated, they were still in advance of their people.

At that date the only rival of the pulpit was the bar. But it was only the selected members of the bar who could fairly be compared with the clergy in education. The special preparation for the practice of the law was incredibly slight. Mr. Lincoln, if I remember rightly, studied law only three months before he was admitted to the bar. General Sherman was admitted to the bar and appeared in court without any legal training whatever. The usual path for the young man who wished to become a lawyer was to "read law" for a brief period in the office of some lawyer, familiarize himself with a few legal forms, copy some deeds and conveyances, get a practical knowledge of the machinery of courts, open an office and learn law, if the fates so willed, by experimenting upon his clients. There was no test which compared with those laid down for applicants for the ministry.

I have before me a memorandum of the questions which were faced by a young man before a Presbytery for his examination thirty-five years ago. It was in a remote country district of Pennsylvania. The young man was "roasted" from morn till eve. Of the twenty or more ministers present every one was a college graduate, as was the candidate himself. An orig
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Does it attract to its ranks men of as high character and ability? Do the theological schools in which it is trained hold the same relative rank among other professional schools for efficiency and thoroughness? I do not ask whether or not the ministry is losing its place of influence in our common life. That question will answer itself if we can find out whether or not the clergy are equipped to hold the place.

It is within the last forty years that the chief development has been made of schools of law, medicine and technology. By far the greater number of them have been created within that period. A dozen new professions which require preliminary education have been evolved during that time, such as journalism, chemical engineering, mining engineering, hydraulic engineering, pedagogy, to say nothing of specialized original research in every direction. How does the ministry as a profession stand among them all? Are as many men, and as good men seeking entrance to it? And are they relatively as well equipped as the ministers were a generation ago? The following tables may throw some light upon the question. The figures are all in cases copied from the Report of the United States Commission of Education; from the statistics of churches in United States census report for 1800 and 1890; from Carroll's "Religious Forces in the United States;" and from catalogues for 1900 of theological seminaries, universities, law and technical schools.

The following table shows the percentage of increase in church membership, and the percentage of increase of students in theological seminaries from 1880 to 1897:

	Increase in Members	Increase in Theological Students	Increase in Members	Increase in Theological Students
	1880 to 1890		1890 to 1897	
Baptist Churches	.55	.42	.08	.00 loss
Methodist "	.80	.66	.18	—.11
Presbyterian "	.42	.14	.14	.43 loss
Lutheran "	.28	.97	—.07	—.10 loss
Congregational Church	.67	.80	.17	—.22
Episcopal Church	.160	.07	.15	.22
Reformed "	.95	.100	.11	.53
Roman Catholic	.00	.00	.25	.45

Several points of interest may be noted. One is the seemingly curious pause or decline in the Roman Catholic church between 1880 and 1890. This appears to contradict the common impression as to the study and rapid growth of that body. It may possibly be only apparent, and to be accounted for by some change in the method of report, though there is nothing to show that this is the case. It is the more striking because during the same period the growth of Protestant churches was quite phenomenal. In the absence of any reason to believe that these latter gained in any unusual degree by means of converts from Romanism the explanation would have to be sought in causes which do not lie in our way in this paper. We are not concerned here with the question of whether the churches have gained in membership, but whether or not young men are seeking the Christian Ministry in as great numbers now as formerly, and what kind of men these latter-day theological students are.

An examination of this table will show some very singular facts. The first is the rapid growth of the Protestant churches during the decade 1880–1890. The Baptists gained more than one-half. The Methodists nearly doubled The Presbyterians gained forty-two per cent. The Episcopal church doubled its membership and more than half as much again. The Roman Catholic church stood still both in membership and seminaries. But the Protestant church which increased its membership most increased its theological students least. The Episcopal church showed a gain of 160 per cent. in members, and only seven per cent. in students. The Lutherans increased in number only twenty-eight per cent., and in students ninety-seven per cent. The Reformed church makes the most remarkable showing so far as percentages appear, but as that body is relatively very small these figures do not mean much.

But now note the astonishing arrest of growth in Protestantism all along the line during the seven years, 1890–1897, and note farther that the decline in the number of students in seminaries is many fold greater than the decline in growth of membership.

Between 1880 and 1890 the Lutherans nearly doubled the number of their seminaries; in the seven years following they lost all this and ten per cent. beside. The Baptist gain fell from forty-two per cent. to nothing; the

Methodist from sixty-six per cent. gain to eleven per cent. loss; the Lutheran from ninety-seven per cent. gain to ten per cent. loss; the Roman Catholic rose from minus one per cent. to plus forty-five per cent.; the Presbyterian from fourteen to forty-three per cent., and the Episcopal from fifteen to twenty-two per cent.

Nothing would be gained by a comparison of the Protestant and Roman Catholic figures. The whole vocation of the Roman priesthood, the conditions which govern it, the preparation for it, are all so radically different from those which obtain in Protestantism that no comparison can be made. The apparent gain in Presbyterian seminaries and loss in those of Baptists and Methodists may to a considerable extent be accounted for by the fact that many of the students of these latter churches go to Presbyterian seminaries for their education, but return to their own denominations for ordination.

The general and obvious fact is that in Protestantism generally the gain in membership is less, and in students very much less than during the preceding decade.

Two farther questions may now be asked:

Are the theological students of to-day being as well educated as was the ministry of a generation ago? This question cannot be answered with certainty, as there are no data for comparison. The predominating opinion among those who entered the ministry thirty years ago is, that the young men of to-day are far less thoroughly equipped relatively to the general education of the people.

The other question is, Does the course of theological students to-day compare favorably with that which students in other professions are pursuing?

To throw some light on the point a letter was addressed at random to fifty-three men in the middle year of theological seminaries whom the catalogues showed to be college graduates, asking them,

First, how, in their opinion, the seminary faculties compared for teaching ability with the faculties of their several colleges? and,

Second, how the students in the seminaries, on the average, compared for ability and force with their classmates in college?

The substance of the reply in almost every case was that,

First, the teaching force in the seminary is distinctly inferior to that in the college; and that,

Second, the average quality of the student in the seminary is distinctly superior to that in the university.

The following table may give still further light upon the question as it exists to-day. Five each of the best theological seminaries, medical schools, law schools, and three schools of technology are compared.

	NAME OF SCHOOL	NUMBER OF STUDENTS	PERCENTAGE OF COLLEGE GRADUATES	COST OF TUITION	LENGTH OF COURSE	APPROXIMATE HOURS OF WORK PER WEEK IN 2D YEAR OF COURSE
THEOLOGY	St. Mary's R. C.	278	.....	Free	3 years of 40 weeks	14
	General, Prot. Epis.	116	60	Free and aid given	3 " " 37 "	18
	Princeton, Presby.	196	80	" " "	3 " " 32 "	16
	Rochester, Baptist.	123	20	" " "	3 " " 35 "	16
	Drew, Methodist.	206	12	" " "	3 " " 34 "	18
MEDICINE	Univ. of Penn.	679	not known	$200	4 years of 36 weeks	21 Dissecting 5. Quiz 10
	Rush, Chicago	888	" "	125	4 " " 34 "	Substantially same as above
	Phys. and Surg., N. Y.	781	" "	225	4 " " 34 "	19 Laboratory 12
	Jefferson, Penn.	638	" "	175	4 " " 28 "	18 Dissecting 10. Laboratory 12
	Harvard, Mass.	603	" "	250	4 " " 40 "	32 in all
LAW	Ann Arbor, Mich.	586	15	$ 50	3 years of 36 weeks	Lectures 13
	Yale, Conn.	213	37	160	2 " " 38 "	" 13
	Columbia, N. Y.	380	55	175	3 " " 36 "	" 19
	Harvard, Mass.	616	80	150	3 " " 39 "	" 24
	Univ. of Penn.	400	7	150	3 " " 34 "	.....
ENGINEERING	Cornell	833	not known	$150–250	4 years	18 Shop work
	Lehigh	375	" "	125–200	4 "	17 " "
	Stevens	240	" "	150–200	4 "	.....

It will be noted that the percentage of college graduates in theological seminaries is far and away greater than the other schools. But on the other hand the work actually required in medical and technical schools is far and away above that in seminaries.

The theological seminary is quite a modern institution, and it may almost be said to be an American invention. It has not been the custom of the church throughout the ages to prepare its ministry in ecclesiastical schools. The theory has always been that a man in mature life hears the divine call, and leaves his nets or his farm or his place at the receipt of custom to be an apostle. This has been largely contradicted, however, by the facts. In the Roman church the priesthood has long been a highly specialized profession for which prolonged technical training is requisite. In the early church it was not so, nor was it so during the middle ages, nor was it so at first anywhere within Protestantism.

For example, Justin Martyr was a Greek philosopher; Augustine a professional rhetorician; Ambrose was a lawyer; Anselm was a merchant; Thomas Aquinas was a dialectician; Calvin was a lawyer; Bishop Barrow was professor of Greek and mathematics; Bishop Andrews was master of Pembroke Hall.

But within the last fifty years, and in the United States chiefly, the law of specialization which operates everywhere has made of the minister a specialist who requires a technical training. Special schools have therefore arisen to furnish the training needed. If they are less efficient and less thorough than other professional schools it is probably largely due to the fact that the object which they have in view is uncertain and ill defined. A Roman Catholic Seminary knows pretty well what it is trying to do; it is training men to be ministers of a ritual cultus and directors of consciences. The Protestant seminaries, when they began, proposed to train men to be expert interpreters of an infallible Book. While they sought this end directly they achieved it. But the time has now come when they have become doubtful about that object, but have not yet seen their way to change their method.

Whether it be due to the incertitude and hesitancy which this situation produces, or to a general falling away of public interest for religion, the fact seems clear that the number of young men being educated for the ministry is steadily diminishing, and that the education which they are receiving is as to quality and thoroughness falling behind that required for entrance to other professions.

SIR HIRAM MAXIM

THE AMERICAN INVENTOR, NOW A GREAT ENGLISH MANUFACTURER — REASONS FOR AMERICAN MANUFACTURING SUPREMACY — ENGLISH AND AMERICAN METHODS COMPARED

BY

CHALMERS ROBERTS

DESPITE the legal change which has taken place in the nationality of Sir Hiram Maxim, who is an American by birth, and the honors showered upon him by his adopted nation, which keep this change constantly in view, he is still in character an American. To some people expatriation is never excusable, and there have, indeed, been recent examples of expatriation for which no real reason could be given. But no one will look into the history of the young inventor who, after years of hard labor, met with wholesale rebuffs at the hand of his home government and compatriot capitalists, and fail to find justification in his determination to make his home with others. It was necessary, from business reasons, that he should become a British subject. He is constantly asserting his American birth and expresses unswerving admiration for the national genius of his native land.

Many years ago a family by the name of Maxim moved into the small village of Sangerville, Maine. Even at that time one of the younger Maxims was marked out as the usual "strange boy," forced to show his metal in combats with the other boys of the village. He easily proved his valor. One is on record where he completely vanquished a rival of over twice his age. When his

family moved to Abbott village his reputation had preceded him. He proceeded to live up to it. No doubt many in those little country towns still find it hard to believe that the bad boy they knew is the man made a knight by the Great Queen.

Even in those early days there were glimmering promises of the future. This boy was the first to make bicycle wheels with two rows of spokes and a suspended hub. He did this as early as 1858 at the age of eighteen. He had attended the ordinary local school until he was fourteen years old. Then he was apprenticed to a carriage builder. Several years after this he was at his uncle's engineering works at Fitchburg, Mass., and later he gained experience with an instrument maker and a shipbuilder in turn. While yet a schoolboy he showed a taste for mechanical work in his father's wood-working factory and grist mill. His father had given some attention to aerial flight and the son had also secured definite knowledge toward the solution of this difficult problem. Among many youthful inventions a novel mousetrap obtained much local celebrity. It was, however, as an inventor of automatic machinery for making carburetted air to light houses and buildings that he became known.

In 1878, when the advent of electricity had greatly damaged the gas business, he took up the question of electric lighting and filed the first patent for depositing carbon on carbon rods electrically heated in an atmosphere of hydro-carbon vapors. It was said at the time that Mr. Maxim had come nearer to making artificial diamonds than anyone else who had ever lived. This was one of the inventions which made incandescent lighting possible. The filaments of all lamps are now treated by this process. In 1881 the inventor was made a Chevalier of the Legion of Honor at the Paris Electrical exhibition because he exhibited the first machine for keeping currents constant in a system of incandescent lighting.

But it was the invention of the automatic gun which made his name famous throughout the civilized world. It was in 1883, at some small works which he had established at Hatton Garden, London, that he made the automatic gun. When it was announced that an American electrical engineer had made a gun which would load and fire itself, England was incredulous—it was too good to be true. But the gun was on exhibition and could be inspected. Since then most of the famous men in the world have at one time or another fired a Maxim gun. Among these was the present King of England while he was yet Prince of Wales. He has always taken the greatest interest in Sir Hiram's work, and said it was a source of pleasure that among the first men he knighted was the American inventor, whose nomination for knighthood was one of the last official acts of his mother, the Queen. The gun marked a new epoch in the manufacture of firearms and in army tactics. The automatic system has been adopted for every machine gun throughout the world, and the little company which was formed in Hatton Garden has been merged into one of the largest concerns in the world—Messrs. Vickers' Sons & Maxim—who now employ more than 14,000 hands, and who are able at their own works to build, engine and arm a complete battleship.

After the automatic gun, Sir Hiram turned his attention to a system of throwing ærial torpedoes. It was believed that it would be better to throw torpedoes through the air than to propel them through the water. This would mean larger torpedoes, a more rapid rate of fire, and more accurate aiming and longer range. A torpedo gun was made and a system worked out. Another plan was to make a great torpedo gun which would explode the charge in the water near a ship, insuring safety by a delayed-action fuse, the moving part of which was only liberated by centrifugal action.

When Lord Wolseley saw the automatic gun fire a large number of rounds, he was surprised at the amount of smoke which was piled up, and suggested employing smokeless powder. Sir Hiram had been experimenting with smokeless powders, some of which had nitro-glycerine and gun-cotton as constituent parts, and as far back as the early part of 1887 he had taken out patents in England on a powder in which nitro-glycerine and gun-cotton were pressed into threads like the cordite of to-day. Specimens of cordite were sent to the United States to be tested, and at the trial at Springfield the committee reported that the Maxim cordite was in all ways the best. This is but an example of the diversity of work which this really great inventor has accomplished. The automatic gun was distinctly a mechanical triumph. The cordite was a question of pure chemistry.

It is highly characteristic of the man and the race he springs from that he consented recently to talk with me about American and British trade. To reach an Englishman of relatively the same position, all manner of propitiation and indorsement would have been necessary. Speaking first on the general subject of modern trade conditions, Sir Hiram said:

"It is almost impossible for the average man to realize the enormous difference under which the workingman of to-day lives and labors in comparison to his predecessor of 100 years ago. Mechanical appliances were then of the very crudest nature, rapid production was impossible, and wages very low. In the absence of machinery everything had to be made by hand, production was slow and painful, and the hours of labor were long. Indeed it may be truly said that man then lived by the sweat of his brow. The working classes had to be content with the barest necessities. As a result of low wages they could not be considered purchasers. The purchasing class was limited to the comparatively rich. A hundred years ago the working people lived in mere hovels, without light or comfort, and always with bare floors. To-day the workingmen of America purchase more square miles of carpet than were sold in Europe during the whole of the eighteenth century.

"Suppose anyone were to make Winchester rifles by hand; they would cost at least $300 each, and none but an extremely skilful man could make them. But now by the use of greatly improved automatic machinery, unskilled workmen and boys are able to produce these rifles with rapidity and cheapness. A watch in the last century represented a great amount of labor. The market was small and few were made; but to-day they are largely made by automatic machinery, and their cost in labor has been so reduced that their use is not confined to the rich. The workmen, who in the first instance were not purchasers at all, have become the largest purchasers, thereby creating a new demand. Thousands are employed in watch making, where only hundreds were employed before.

"Thus the great change which has come in manufacturing industries during the last hundred years is due altogether to improvements in machinery and mechanical appliances. By the cheapening of production, especially through the decrease of labor required for any particular article, the manufacturer has been able to pay the working class a much larger wage, and this, together with the cheapening of the product, has converted the working class itself into the most important purchasing class that we have. The whole trend of western civilization is in the direction of rapid and cheap production. Every one whose eyes are not blinded by trade union fallacies must see that the greater the production and the less the labor represented in the article the greater the market must inevitably be; production and the market react upon each other."

"There is, however," I suggested, "a marked difference between the British and the American workingman."

"Yes. But that is greatly a result of differing conditions and methods. In the United States, especially in the New England states, very high salaries are paid to really skilful, able and active mechanics. As a rule there is no such thing as a fixed wage, each man being paid in proportion to his skill and his application to business and every encouragement is given to inventive genius. Any man who can cheapen a process by designing new tools is considered of great value to the manufacturer and is paid accordingly. The New England manufacturer, who is alive to the fact that success depends upon the rapidity and consequent cheapness of production, can pay a skilled mechanic $5 a day, and still be able to place in the European market many articles of manufacture at prices below those which prevail in Europe. In England there is a great degree of conservatism, not only among the working people but among the manufacturers themselves. When I first came to England if I went into a factory, and saw work being done in an old or crude fashion and suggested any improvement either to the workman or his employer I at once found them very combative. They considered it necessary to say only that it was the English system.

"In New England the manufacturer is always seeking something new; he cannot afford to use old or imperfect tools. In England the tendency of the manufacturer is not to get a new tool so long as there is anything left of the old one. In New England the manufacturer as a rule takes great pride in the cleanliness and order of his shop. He

thinks of nothing but his business and of bringing it to the highest degree of perfection. He has no interests outside his factory. In England, on the contrary, the manufacturer is apt to look on his work differently. As a rule he takes very little interest in what is going on, does not identify himself with the working people at all and is looking forward to the time when he shall retire from business and have nothing more to do with commerce or manufacture. In New England the working mechanic takes great pride in learning his profession thoroughly. He talks shop in season and out of season and has an extensive and well selected kit of tools. The British mechanic looks upon his trade only as a badge of servitude; he never thinks of his business when he is not obliged to and as far as his tools are concerned he is often content with a centre punch and a hammer."

"Still," I interposed, "I have noticed that when the British workman goes to the United States he soon takes a position second to none."

"The American workman wishes to get on, he wishes to rise to the top of the ladder, he is jealous of other workmen, he does not like the idea of being beaten at his own trade. The result is that he accomplishes a great deal more work in a day than any other workman in the world. The English workingman on the other hand is controlled by trade unions. He can receive only a certain wage. He has no ambition to purchase a house, he cares nothing for books or carpets, and spends a great part of his earnings in beer, tobacco and betting on horses. Still I fully agree with you that when the same man emigrates to the United States he soon adopts American ideas, becomes ambitious, temperate, and is able in a short time to do quite as much work as his American brethren."

Sir Hiram was asked concerning his experience with British trade unions.

"The British manufacturer," he said, "has a far greater difficulty to contend with than that of tools. A very clever Scotchman, who was once manager of our works, said the greatest obstacle he had to contend with was 'organized idleness,' while the present manager of our gun works, although an engineer of the very highest order, confesses that his duties are rather those of a detective than of an engineer. Trade unionism has reached a development in England unknown in any other part of the world, and perhaps the most malignant type is that found among the metal workers. The union known as the Amalgamated Society of Engineers not only attempts to prevent what they are pleased to call unskilled mechanics from working machines at all, but if their own men are themselves employed on machines, they resort to every trick and expedient to limit the output. In many cases a lathe may run a whole day without ever taking a cut at all. They oppose the introduction of new systems or new tools. In fact all their influence is directed against rapid and cheap production. A large English manufacturer said to me recently that there are more than a hundred different ways in which an employee can cheat his employer.

"The fact is that the interference of the trade union is so vexatious and arbitrary that English employers feel disposed to make almost any sacrifice to get rid of it, and it appears to me that the only hope lies in the direction of the Federation of the Employers, a society formed in England some years ago. If the employers can be made to understand that the principal obstacle which prevents England from competing with the other nations of the world in the manufacture of metal articles is trade unionism, and that the only practical way of combatting it is by counter combination on their own part, then the time cannot be far distant when the trade unions will be robbed of their power to do harm, and once more it may become a pleasure to do business in England.

"A great deal has been said about the necessity of harmony between the employers and the employed. There is no question but that this harmony exists in a great many of the American shops. In Germany also there seems to be a complete understanding between the master and the men in regard to cheap and rapid production. The German workman understands that he has the whole world to compete with, and he is willing to meet the master half way in order to get the work. I remember a case in point. By a mutual understanding between the master and the men a contract was taken at reduced wages, with the result that the work was so cheapened that the master was able to pay full rates at the end of the year.

"In England, on the contrary, it is quite out of the question to attempt to come to any mutual understanding of this sort with

the workmen. I know one case where a large contract was taken on the basis of existing wages, and no sooner did the men find that the contract had been signed than they struck for an increase. As the contract had been taken only on a small margin of profit, it was found impossible to accede to their demands. The work was taken to France. When the strike ended there was nothing to do. The Frenchmen got the work, they have kept it ever since, and the English works have now been closed for several years.

"If England wishes to compete successfully and to maintain the position which she sought to occupy as a great manufacturing nation, she will not only have to equip her factories with the latest and best instruments, but she will also have to obtain the earnest coöperation of the men who work those instruments. The antagonism which at present exists between the masters and the men is altogether artificial. The great majority of the employers treat their men with absolute justice. Unfortunately in many cases the wages paid are so high as to leave nothing for the master. If the men were left to themselves they would probably very soon see that it was to their interest to do their best and look upon their employers as friends and benefactors; but the working man has been taught by the professional agitator that his greatest enemy is his employer. He is made to believe that to be a capitalist is to be a criminal and that to cheat his master is the only way to 'get square' with him, and he is foolish enough to pay the man who teaches him this folly enough to enable him to live without working."

"What mechanical improvements do you think most necessary in British manufacturing methods?" I asked Sir Hiram.

"I should say the adoption of what is known as standardization and interchangeability. The Americans first adopted this, I think, in connection with the manufacture of Springfield rifles. Before that time each particular rifle had its own individuality—no two were alike. The introduction of the interchangeable system did away with all this irregularity and greatly simplified and cheapened the product. It enable the manufacturers to make all the separate pieces in large quantities, each particular piece being fitted to a gauge. If it passed the gauge it was sure to fit the gun. The Americans are not alone in the use of this system to-day as far as guns are concerned but they have applied it to many other things, such as locomotives, steam engines and even bridges. This has given them a great advantage. One of the reasons why the interchangeable system pays better in the United States than it could in Europe is because the United States is so much bigger than any country in Europe. It costs a great deal to make jigs and gauges and it does not pay unless the output is very large. Perhaps there is no maker of locomotives in Europe whom it would pay to adopt the system now used by the Baldwins of Philadelphia."

"Is the British business man indolent or merely deliberate?" I asked.

"I do not think we can call the English business men indolent when we consider that they have accumulated more wealth in proportion to their numbers than any other people that ever lived in the world. In almost every part of the world British capital is invested."

"You were speaking just now of what England must do to maintain her present position in the commercial world. Do you expect her to regain her lost leadership?"

"I think there can be no question that the United States will continue to lead. In fact I feel certain that she will not only maintain the lead, but will increase it. I might say that in the immediate future she ought to lead all competitors put together. By this I do not mean that English manufactures or exports will fall off; for England will no doubt maintain easily the position which she now occupies. It is her relative position which she has lost. American manufacturers have many advantages in their favor, such as a very large, rich prosperous population, and absolute free trade from one end of the country to the other. The number of purchasers is not only greater than any other country, but the standard of living among the working classes is much higher. Consequently the purchasing class is vastly out of proportion to that found in any other country in the world.

"Moreover in the United States coal and iron are very cheap and abundant, and the labor troubles are not so nettling as they are in England. It seems to me that the formation of immense trusts in the United States cannot fail to be very advantageous to the

EDWARD VII FIRING A MAXIM GUN

Taken when the present King was the Prince of Wales

manufacturing interests of the country. There is no question that there is a certain clique in the United States which is seeking to agitate the working people, and to stir up the strife between master and man that has proved so disastrous in England. If they should succeed the cost of production would be vastly increased in the United States.

"During the last six or seven years the engineering trades of England have been very prosperous, and this prosperity is principally due to the fact that, in the great strike which took place in 1896 and 1897, the workmen struck, not for higher wages, but for the control of the works. They practically asked that the management of the engineering works should be turned over to the professional agitator. The claim was so preposterous that for the first time in the history of England a solid and *bona fide* combination of the manufacturers was formed; in other words a union of the employers was able to hold out against the strike until the funds of the strikers were exhausted. Had it not been for this combination the present prosperity of the engineering trades would have been impossible.

"I think that we may consider the great trusts of the United States little more than combinations of employers who arrange a plan to make it impossible for any single firm to withdraw or to take advantage of other firms. If such a combination does nothing more than to prevent strikes it will give the Americans a decided advantage over their European rivals."

"Do you think that economic and political changes will be necessary for the retention of the present British position?"

"England has many natural advantages, while all the disadvantages are self-made and artificial. England has plenty of coal and iron. If it were possible to import, say, Italians who would work a reasonable number of hours in the mines, coal and iron would be greatly cheapened in England. England has better coal and more of it than any other European country, and iron of a better quality is cheaply and easily imported from Norway, Sweden and Spain. England has more capital than any other country in the world of the same population. England has also an immense mercantile fleet which is ready to take her products into the most distant parts of the world. But as against this the employers are too conservative. M
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WORKING BY THE DAY IN THE COTTON FIELD

THE NEGRO AS HE REALLY IS

A DEFINITE STUDY OF ONE LOCALITY IN GEORGIA SHOWING THE EXACT CONDITIONS OF EVERY NEGRO FAMILY—THEIR ECONOMIC STATUS—THEIR OWNERSHIP OF LAND—THEIR MORALS—THEIR FAMILY LIFE—THE HOUSES THEY LIVE IN AND THE RESULTS OF THE MORTGAGE SYSTEM

BY

W. E. BURGHARDT DUBOIS

PROFESSOR OF ECONOMICS AND HISTORY IN ATLANTA UNIVERSITY

Photographically Illustrated by A. Radclyffe Dugmore

OUT of the North the train thundered, and we woke to see the crimson soil of Georgia stretching away bare and monotonous right and left. Here and there lay straggling unlovely villages; but we did not nod and weary of the scene for this is historic ground. Right across our track DeSoto wandered 360 years ago; here lies busy Atlanta, the City of the Poor White, and on to the southwest we passed into the land of Cherokees, the geographical centre of the Negro Problems—the centre of those 9,000,000 men who are the dark legacy of slavery. Georgia is not only thus in the middle of the black population of America, but in many other respects this race question has focused itself here. No other state can count as many as 850,000 Negroes in its population, and no other state fought so long and strenuously to gather this host of Africans.

On we rode. The bare red clay and pines of North Georgia began to disappear, and in their place came rich rolling soil, here and there well tilled. Then the land and the people grew darker, cotton fields and delapidated buildings appeared, and we entered the Black Belt.

Two hundred miles south of Atlanta, two hundred miles west of the Atlantic, and one

IN THE COBBLER'S SHOP

"BIG HOUSE" AND NEGRO QUARTERS
The house is no longer in use although the Negro quarters are

hundred miles north of the great Gulf lies Dougherty County. Its largest town, Albany, lies in the heart of the Black Belt, and is to-day a wide-stretched, placid, southern town, with a broad street of stores and saloons flanked by rows of homes—whites usually to the north, and blacks to the south. Six days in the week the town looks decidedly too small for itself, and takes frequent and prolonged naps; but on Saturday suddenly the whole country disgorges itself upon this one spot, and a flood of black peasantry passes through the streets, fills the stores, blocks the sidewalks, chokes the thoroughfares, and takes

NEGRO COTTAGES
Owned by the Negro who keeps the store pictured on page 858

A NEGRO SCHOOL NEAR ALBANY, GEORGIA
Where children go after "crops are laid by"

full possession of the town. They are uncouth country folk, good-natured and simple, talkative to a degree, yet far more silent and brooding than the crowds of the Rhine-Pfalz, Naples, or Cracow. They drink a good deal of whiskey, but they do not get very drunk; they talk and laugh loudly at times, but they seldom quarrel or fight. They walk up and down the streets, meet and gossip with friends, stare at the shop-windows, buy coffee, cheap candy and clothes, and at dusk drive home happy.

Thus Albany is a real capital—a typical southern country town, the centre of the life of ten thousand souls; their point of contact with the outer world, their centre of news and gossip, their market for buying and selling, borrowing and lending, their fountain of justice and law.

We seldom study the condition of the Negro to-day honestly and carefully. It is so much easier to assume that we know it all. And yet, how little we know of these millions —of their daily lives and longings, of their homely joys and sorrows, of their real shortcomings and the meaning of their crimes.

Dougherty county, Georgia, had, in 1890, ten thousand black folks and two thousand whites. Its growth in population* may thus be pictured:

YEAR	NEGROES	WHITES	TOTALS
1820	225	551	776
1830	276	977	1,253
1840	1,779	2,447	4,226
1850	3,769	4,351	8,120
1860	6,088	2,207	8,295
1870	9,424	2,093	11,517
1880	10,670	1,952	12,622
1890	10,231	1,975	12,206
1899	9,000	.....	.....

* The boundaries of the county have frequently changed. It was a part of Early County first, then of Baker, and finally was laid out as Dougherty in 1853.

the Cotton Kingdom, the shadow
n of slave empire which for a gen-
toxicated a people. Yonder is the

NEGRO WOMAN PLOUGHING IN A COTTON FIELD
A field cultivated on the new system

s ruins—a black renter, fighting a
le with debt. A feeling of silent
falls on one as he gazes on this
ed stricken land, with its silent
deserted cabins and fallen fences.
a land rich in natural resources,
for despite the fact that few in-
ay better dividends than cotton
re; despite the fact that the modern
store with its mass of cotton-fabrics
the high-water mark of retail store-

keeping; despite all this, the truth remains that half the cotton-growers of the south are nearly bankrupt and the black laborer in the cotton fields is a serf.

The key-note of the Black Belt is debt. Not credit, in the commercial sense of the term, but debt in the sense of continued inability to make income cover expense. This is the direct heritage of the south from the wasteful economics of the slave regime, but it was emphasized and brought to a crisis by the emancipation of the slaves. In 1860 Dougherty County had 6,079 slaves worth probably $2,500,000; its farms were estimated at $2,995,923. Here was $5,500,000 of property, the value of which depended largely on the slave system, and on the speculative demand for land once marvellously rich, but already devitalized by careless and exhaustive culture. The war then meant a financial crash; in place of the $5,500,000 of 1860, there remained in 1870 only farms valued at $1,739,470. With this came increased competition in cotton culture from the rich lands of Texas, a steady fall in the price of cotton followed from about fourteen cents a pound in 1860* until it reached four cents in 1893. Such a financial revolution was it that involved the owners of the cotton belt in debt. And if things went ill with the master, how fared it with the man?

The plantations of Dougherty in slavery days were not so imposing and aristocratic as those of Virginia. The Big House was smaller and usually one-storied, and set very near the slave cabins.

The form and disposition of the laborers' cabins throughout the Black Belt, is to-day,

*Omitting famine prices during the war.

the same as in slavery days. All are sprinkled in little groups over the face of the land centering about some dilapidated Big House where the head tenant or agent lives. There were reported in the county outside the corporate town of Albany 1,424 Negro families in 1899. Out of all these only a single one occupied a house of seven rooms; only fourteen have five rooms or more. The mass live in one and two-room homes.

The size and arrangements of a people's homes are a fair index to their condition. All over the face of the land is the one-room cabin; now standing in the shadow of the Big House, now staring at the dusty road, now rising dark and sombre amid the green of the cotton fields. It is nearly always old and bare, built of rough boards and neither plastered nor sealed. Light and ventilation are supplied by the single door and the square hole in the wall with its wooden shutter. Within is a fire-place, black and smoky, and usually unsteady with age. A bed or two, a table, a wooden chest and a few chairs make up the furniture, while a stray show-bill or a newspaper decorate the walls.

A REST IN THE FURROW

We have come to associate crowding with homes in cities almost exclusively. Here in Dougherty county, in the open country, is crowding enough. The rooms in these cabins are seldom over twenty or twenty-five feet square, and frequently smaller; yet one family of eleven lives, eats and sleeps in one room, while thirty families of eight or more members live in such one-room dwellings.

To sum up, there are among these Negroes over twenty-five persons for every ten rooms of house accommodation. In the worst tenement abominations of New York and Boston there are in no case over twenty-two persons to each ten rooms, and usually not over ten. Of course, one small, close room in a city, without a yard, is in many respects worse than the larger single country room.

The one decided advantage the Negro has is a place to live outside his home—that is the open fields, where most of his life is spent.

Ninety-four per cent. of these homes are rented and the question therefore arises, what in the industrial system of the Black Belt is responsible for these wretched tenements? There would seem to be four main causes. First, long custom, born in the time of

WOMEN FROM THE COUNTRY
A Saturday group in Albany, Ga.

slavery, has assigned this sort of a home to Negroes, until land owners seldom think of offering better houses. Should white labor be imported here, or the capital here invested be transferred to industries where whites are employed, the owners would not hesitate to erect cosy, decent homes, such as are often found near the new cotton factories. This explains why the substitution of white for black labor is often profitable—the laborer is far better paid and cared for. In the second place, the low standard of living among slaves is naturally inherited among freedmen and their sons; the mass of them do not demand better houses because they do not know what better houses are. Thirdly, the landlords as a class have not yet come to realize that it is a good business investment to raise the standard of living among laborers by slow and judicious methods; that a Negro laborer who demands three rooms and fifty cents a day would give far more efficient work and leave a larger profit than a discouraged toiler herding his family in one room and working for thirty cents. Lastly, among such conditions of life there are few incentives to make the laborer become a better farmer. If he is ambitious, he moves to town or tries other kinds of labor; as a tenant farmer his outlook is almost hopeless, and following it as a makeshift he takes the house that is given him without protest.

ON THE STREET
"They meet and gossip with their friends"

A PARSON AND PART OF HIS FLOCK

That we may see more fully the working out of these social forces, let us turn from the home to the family that lives in it. The Negroes in this country are noticeable both for large and small families; nearly a tenth of all the families are families of one—that is, lone persons living by themselves. Then, too, there is an unusual number of families of ten or more. The average family is not large, however, owing to the system of labor and the size of the homes, which tends to the separation of family groups. Then the large and continuous migration of young people to town brings down the average. So that one finds many families with hosts of babies, and

HER WEEK'S MARKETING

LEARNING TO SHUFFLE EARLY

A PICKANINNY CAKE WALK

many newly-married young couples, but comparatively few families with half-grown and grown children.

The families of one are interesting. Some of them—about a fifth—are old people. Away down at the edge of the woods will live some old grizzle-haired black man, digging wearily in the earth for his last bread. Or yonder, near some prosperous Negro farmer, will sit alone a swarthy auntie, fat and good-humored, supported half in charity and half by odd jobs.

Probably the size of Negro families is decreasing, and that, too, from postponement of marriage, rather than from immorality or loss of physical stamina. To-day in this county only two per cent. of the boys and sixteen per cent. of the girls under twenty are married. Most of the young men marry between the ages of twenty-five and thirty-five, and the girls between twenty and thirty—an advanced age for a rural people of low average culture.

The cause of this is without doubt economic stress—the difficulty of earning sufficient to rear a family. The result is the breaking of the marriage-tie and sexual looseness.

The number of separated persons is thirty-five per 1000—a very large number. It would of course be unfair to compare this number with divorce statistics for many of these separated are in reality widowed, were the truth known, and in other cases the separation is not permanent. Nevertheless here lies the seat of greatest moral danger; there is little or no prostitution among these Negroes, and over four-fifths of the families, after house to house investigation, deserve to be classed as decent people with considerable regard for female chastity. The plague-spot in sexual relations is easy marriage and easy separation. This is no sudden development, nor the fruit of emancipation. It is a plain heritage from slavery. In those days Sam, with his master's consent, "took up" with Mary. No ceremony was necessary, and in the busy life of great plantations of the Black Belt it was usually dispensed with. If now the master needed Sam's work on another plantation or in another part of the same

HUTS NEAR ALBANY, GEORGIA
Showing old mud and wood chimney

A TYPICAL NEGRO STORE

plantation, or if he took a notion to sell the slave, Sam's married life with Mary was usually unceremoniously broken, and then it was clearly to the master's interest to have both of them take new mates. This wide-spread custom of two centuries has not been eradicated in thirty years. Probably seventy-five per cent. of the marriages now are performed by the pastors. Nevertheless, the evil is still deep seated and only a general raising of the standard of living will finally cure it.

The ignorance of the ex-slaves is far deeper than crude estimates indicate. It is ignorance of the world and its meaning, of modern economic organization, of the function of government, of individual worth and possibility—indeed, of all those things as to which it was for the interest of the slave system to keep the laboring class in profound darkness. Those very things then which a white boy absorbs from his earliest social atmosphere—starts with, so to speak, are the puzzling problems of the black boy's maturer years. And this, too, not by reason of dullness but for lack of opportunity.

It is hard for an individual mind to grasp and comprehend the real social condition of a mass of human beings without losing itself in details and forgetting that after all each unit studied is a throbbing soul. Ignorant it may be, and poverty-stricken, black and curious in limb and ways and thought; and yet it loves and hates, it toils and tires, it laughs and weeps its bitter tears, and looks in vague and awful longing at the grim horizon of its life—all this, even as you and I. These black thousands are not lazy; they are improvident and careless, they insist on breaking the monotony of toil with a glimpse at the great town-world on Saturday, they have their loafers and ne'er-do-weels, but the great mass of them work continuously and faithfully for a return and under circumstances that would call forth equal voluntary effort from few, if any, other modern laboring class. Over 88 per cent. of them, men, women and children, are farmers.

AT WORK MAKING BROOMS

LOG CABIN HOME

The rest are laborers on railroads, in the turpentine forests and elsewhere, teamsters and porters, artisans and servants. There are ten merchants, four teachers, and twenty-one who preach and farm.

Most of the children get their schooling after the "crops are laid by" and very few there are that stay in school after the spring work has commenced. Child-labor is found here in some of its worst phases, as fostering ignorance and stunting physical development.

Among this people there is no leisure class; ninety-six per cent of them are toiling—no one with leisure to turn the bare and cheerless cabin into a home, no old folks to sit beside the fire and hand down traditions of the past, little of careless, happy childhood and dreaming youth. The dull monotony of daily life is broken only by the Saturday trips to town.

The land is still fertile, despite long abuse. For nine and ten months in succession the crops will come if asked; garden vegetables in April, grain in May, melons in June and July, hay in August, sweet potatoes in September, and cotton from then to Christmas. And yet over two-thirds of the land there is but one crop and that leaves the toilers in debt. Why is this?

WOMEN "SOWING" GUANO.

The merchant of the Black Belt is a curious institution—part banker, part landlord, part contractor, and part despot. His store which used most frequently to stand at the cross-roads and become the centre of a weekly village, has now moved to town and thither the Negro tenant follows him. The merchant keeps everything—clothes and shoes, coffee and sugar, pork and meal, canned and dried

A FRIEND OF GEORGE WASHINGTON

He believes that he was with Washington when the cherry tree was cut down and allowed his photograph to be taken only on condition that a copy would be sent to his old friend

goods, wagons and plows, seed and fertilizer —and what he has not in stock he can give you an order for at the store across the way. Here, then, comes the tenant, Sam Scott, after he has contracted with some absent landlord's agent for hiring forty acres of land; he fingers his hat nervously until the merchant finishes his morning chat with Colonel Sanders, when he calls out "Well, Sam, what do you want?" Sam wants him to "furnish" him—i.e., to advance him food and clothing for the year, and perhaps seed and tools, until his crop is raised and sold. If Sam seems a favorable subject he and the merchant go to a lawyer and Sam executes a chattel mortgage on his mule and wagon in return for seed and a week's rations. As soon as the green cotton leaves appear above the ground another mortgage is given on the "crop." Every Saturday or at longer intervals Sam calls upon the merchant for his "rations;" a family of five usually gets about thirty pounds of fat side-pork and a couple of bushels of corn-meal a month. Beside this, clothing and shoes must be furnished; if Sam or his family is sick there are orders on the druggist and doctor; if the mule wants shoeing, an order on the blacksmith, etc. If Sam is a hard worker and crops promise well, he is often encouraged to buy more—sugar, extra clothes, perhaps a buggy. But he is seldom encouraged to save. When cotton rose to ten cents last fall the shrewd merchants sold a thousand buggies in one season, mostly to black men.

The security offered for such transactions —a crop and chattel mortgage—may at first seem slight. And indeed, the merchants tell many a true tale of shiftlessness and cheating; of cotton picked at night, mules disappearing and tenants absconding. But on the whole the merchant of the Black Belt is the most prosperous man in the section. So skilfully and so closely has he drawn the bonds of the law about the tenant that the black man has often simply to choose between pauperism and crime; he "waives" all homestead exemptions in his contract; he cannot touch his own mortgaged crop, which the laws put almost in the full control of the landowner and of the merchant. When the crop is growing the merchant watches it like a hawk; as soon as it is ready for market he takes possession of it, sells it, pays the landowner his rent, subtracts his bill for supplies and if, as sometimes happens, there is anything left he hands it over to the black se bration.

The direct result cotton scheme of agr bankruptcy of the t the Black Belt is co salable for ready mor great yearly fluctua which the Negroes landlord therefore de and the merchant wi other crop. There black tenant then t cannot under this system is bound to remember once m wagon on the Rive fellow sat in it driv on his knees. His h him stolid, silent.

"Hello!" cried m impudent way of a though they seem us got there?"

"Meat and meal," ping. The meat lay of the wagon, a gre covered with salt; t bushel bag.

"What did you pa

"Ten cents a pou bought for six or sev

"And the meal?"

"Two dollars." is the cash price in man paying $5 for g bought for $3 cash, a

Yet it is not whol farmer started behin was not his choosin happy-go-lucky natio along with its Rec Spanish war interlu inees, just as thoug Once in debt it is no race to emerge.

The other underlyi are complicated but the chief, outside the in letting the slave s widespread opinion a employers of the Bla slavery of debt can work. Behind this opinion, dishonesty a

THE DISTRIBUTION OF NEGRO POPULATION IN THE UNITED STATES

rant laborers have a good chance to take refuge. And to all this must be added the obvious fact that a slave ancestry and a system of unrequited toil have not improved the efficiency or temper of the mass of black laborers. Nor is this peculiar to Sambo—it has in history been just as true of John and Hans, of Jacques and Pat, of all ground-down peasantries. Such is the situation of the mass of the Negroes in the Black Belt to-day, and they are thinking about it. Crime and a cheap, dangerous socialism are the inevitable results of this pondering. I see now that ragged black man sitting on a log, aimlessly whittling a stick. He mutters to me with the murmur of many ages when he says: "White man sit down whole year; Nigger work day and night and make crop; Nigger hardly gits bread and meat; white man sittin' down gits all. It's wrong."

A modern laboring class in most lands would find a remedy for this situation in migration. And so does the Negro, but his movement is restricted in many ways.

In considerable parts of all the gulf states, and especially in Mississippi, Louisiana and Arkansas, the Negroes on the plantations in the back country districts are still held at forced labor practically without wages. Especially is this true in districts where the farmers are composed of the more ignorant class of poor whites, and the Negroes are beyond the reach of schools and intercourse with their advancing fellows. If such a peon should run away, the sheriff, elected by white suffrage, can usually be depended on to catch the fugitive, return him and ask no questions. If he escape to another county, a charge of petty thieving, easily true, can be depended on to secure his return. Even if some unduly officious person insist upon a trial, neighborly comity will probably make his conviction sure, and then the labor due the county can easily be bought by the master.

Such a system is unusual in the more civilized parts of the South, or near the large towns and cities; but in those vast stretches of land beyond the telegraph and newspaper the spirit of the Fourteenth Amendment is sadly broken. This represents the lowest economic depths of the black American peasant and in a study of the rise and condition of the Negro freeholder we must trace his economic progress from this modern serfdom.

Even in the better ordered country districts of the south the free movement of agricultural laborers is hindered by the migration agent laws. The Associated Press informed the world not long since of the arrest of a young white man in south Georgia who represented the "Atlantic Naval Supplies Company," and who "was caught in the act of enticing hands from the turpentine farm of Mr. John Greer." The crime for which this young man was arrested is taxed $500 for each county in which the employment agent proposes to gather laborers for work outside the state. Thus the Negroes' ignorance of the labor market outside his own vicinity is increased rather than diminished by the laws of nearly every southern state.

Similar to such measures is the unwritten law of the back districts and small towns of the south, that the character of all Negroes unknown to the mass of the community must be vouched for by some white man. This is really a revival of the old Roman idea of the patron under whose protection the new-made freedman was put. In many instances this system has been of great good to the Negro, and very often, under the protection and guidance of the former master's family or other white friends, the freedman progressed in wealth and morality. But the same system has in other cases resulted in the refusal of whole communities to recognize the right of a Negro to change his habitation and to be master of his own fortunes. A black stranger in Baker County, Georgia, for instance is liable to be stopped anywhere on the public highway and made to state his business to the satisfaction of any white interrogator. If he fails to give a suitable answer or seems too independent or "sassy" he may be arrested or summarily driven away.

As a result of such a situation arose, first, the Black Belt and, second, the Migration to Town. The Black Belt was not, as many assumed, a movement towards fields of labor under more genial climatic conditions; it was primarily a huddling together for self-protection; a massing of the black population for mutual defense in order to secure the peace and tranquility necessary to economic advance. This movement took place between emancipation and 1880 and only partially accomplished the desired results. The rush to town since 1880 is the counter movement of men disappointed in the economic opportunities of the Black Belt.

In Dougherty County, Georgia, one can see easily the results of this experiment in huddling for protection. Only ten per cent. of the adult population was born in the county, and yet the blacks outnumber the whites four or five to one. There is undoubtedly a security to the blacks in their very numbers—a personal freedom from arbitrary treatment, which makes hundreds of laborers cling to Dougherty in spite of low wages and economic distress. But a change is coming, and slowly but surely even here the agricultural laborers are drifting to town and leaving the broad acres behind. Why is this? Why do not the Negroes become landowners and build up the black landed peasantry, which has for a generation and more been the dream of philanthropist and statesman?

This is the question which this paper seeks to answer; it seeks to trace the rise of the black freeholder in one county of Georgia's Black Belt, and his struggle for survival, to picture present conditions and show why migration to town is the Negro's remedy. To the car-window sociologist, to the man who seeks to understand and know the south by devoting the few leisure hours of a holiday trip to unraveling the snarl of centuries—to such men very often the whole trouble with the black field-hand may be summed up by Aunt Ophelia's word: "Shiftless!" And yet they are not lazy, these men; they work hard when they do work, and they work willingly. They have no sordid selfish money-getting ways but rather a fine disdain for mere cash. They'll loaf before your face and work behind your back with good-natured honesty. Their great defect as laborers lies in their lack of incentive to work beyond the mere pleasure of physical exertion. They are careless because they have not found that it pays to be careful; they are improvident because the improvident ones of their acquaintance get on about as well as the provident. Above all they cannot see why they should take unusual pains to make the white man's land better or to take more care of his mule and corn.

On the other hand the white land-owner argues that any attempt to improve these laborers by increased responsibility or higher wages or better homes or land of their own would be sure to result in failure. He shows his northern visitor the scarred land; the ruined mansions, the worn-out soil and mortgaged acres and says, "This is Negro freedom!"

Now it happens that both master and man have just enough argument on their respective sides to make it difficult for them to understand each other. The Negro dimly personifies in the white man all his ills and misfortunes; if he is poor it is because the white man secures the fruits of his toil; if he is ignorant it is because the white man gives him neither time nor facilities to learn. And, indeed, if any misfortune happens to him it is because of some hidden machinations of "white folks." On the other hand the masters and the masters' sons have never been able to see why the Negroes, instead of settling down to be day laborers for bread and clothes, are infected with a silly desire to "rise" in the world, and are sulky, dissatisfied and careless where their fathers were happy and dumb and faithful. "Why! these niggers have an easier time than I do," said a puzzled Albany merchant to his black customer. "Yes," he replied, "and so does yo' hogs."

Looking now.at the county black population as a whole, we might attempt to divide it roughly into social classes. Forty-four families, all landowners, from their intelligence, property and home life would correspond to good middle class people anywhere. Seventy-six other families are honest working people of fair intelligence. One hundred and twenty-five families fall distinctly below the line of respectability and should be classed with the lewd, vicious and potentially criminal. This leaves the mass of the population, 1,229 families composed of the poor, the ignorant, the plodding toilers and shiftless workers—honest and well-meaning, with some, but not great, sexual looseness, handicapped by their history and present economic condition.

The class lines are by no means fixed and immutable. A bad harvest may ruin many of the best and increase the numbers of the worst.

The croppers are entirely without capital, even in the limited sense of food or money, to keep them from seed-time to harvest. All they furnish then is labor; the landowner furnishes land, stock, tools, seed and house, and at the end of the year the laborer gets from a third to a half of the crop. Out of his share, however, comes payment and interest for food and clothing advanced him during the year. Thus we have a laborer without capital and without wages, and an employer whose capital is largely his employees' wages. It is

an unsatisfactory arrangement both to hirer and hired, and is usually in vogue on poor land with hard-pressed owners.

Above the croppers come the great mass of the black population who work the land on their own responsibility, paying rent in cotton and supported by the crop mortgage system. After the war this system was attractive to the freedmen on account of its larger freedom and its possibilities for making a surplus. But with the carrying out of the crop-lien system, the deterioration of the land and the slavery of debt, the position of the metayers has sunk to a dead level of practically unrewarded toil. Formerly all tenants had some capital, and often considerable, but absentee landlordism, rack-rent and falling cotton, have stripped them well nigh of all, and probably not over half of them in 1898 owned mules. The change from cropper to tenant was accomplished by fixing the rent. If, now, the rent fixed was reasonable, this was an incentive to the tenant to strive. On the other hand, if the rent was too high, or if the land deteriorated, the result was to discourage and check the efforts of the black peasantry. There is no doubt that the latter case is true; thus in Dougherty county every economic advantage of the price of cotton in the market and of the strivings of the tenant, has been taken advantage of by the landlords and merchants, and swallowed up in rent and interest. If cotton rose in price, the rent rose even higher. If cotton fell the rent remained, or followed reluctantly. If a tenant worked hard and raised a large crop, his rent was raised the next year. If that year the crop failed, his corn was confiscated and his mule sold for debt. There were, of course, exceptions to this—cases of personal kindness and forbearance, but in the vast majority of cases the rule was to extract the uttermost farthing from the mass of the black farm laborers.

The result of such rack-rent can only be evil—abuse and neglect of the soil, deterioration in the character of the laborers, and a widespread sense of injustice. On this low plane half the black population of Dougherty county—perhaps more than half the black millions of this land—are to-day struggling.

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Out of the hard economic conditions of this portion of the Black Belt only six per cent. of the population have succeeded in emerging into peasant-proprietorship, and these are not all firmly fixed, but grow and shrink in number with the wavering of the cotton market. Fully 94 per cent. have struggled for land and failed, and half of them sit in hopeless serfdom. For these there is one other avenue of escape toward which they have turned in increasing numbers, namely, migration to town. A glance at the distribution of land among the black owners curiously reveals this fact. In 1898 the holdings were as follows: Under 40 acres, 49 families; 40 to 250 acres, 17 families; 250 to 1,000 acres, 13 families; 1,000 or more acres, 2 families. Now in 1890 there were forty-four holdings, but only nine of these were under forty acres. The great increase of holdings then has come in the buying of small homesteads near town, where their owners really share in the town life. This then is a part of the rush to town. And for every landowner who has thus hurried away from the narrow life and hard conditions of country life how many field hands, how many tenants, how many ruined renters have joined that long procession? Is it not strange compensation? The sin of the country districts is visited on the town, and the social sores of city life to-day may, here in Dougherty county and perhaps in many places, near and far, look for their final healing without the city walls.

AN IDEAL SCHOOLHOUSE

THE HYGIENIC AND ARCHITECTURAL REQUIREMENTS OF A BUILDING THAT WOULD PRESERVE THE HEALTH AND CONTRIBUTE TO THE DEVELOPMENT OF THE CHILD—THE FRIGHTFULLY UNSANITARY CONDITIONS OF BUILDINGS IN MOST OF OUR CITIES—UNHEALTHFUL CONDITIONS OF SCHOOL WORK.

BY

DR. WM. H. BURNHAM

ASSISTANT PROFESSOR OF PEDAGOGY IN CLARK UNIVERSITY

OF all the differences in this land of contrast, none are more remarkable than those in the education of our children. The contrast extends to the schoolhouses. Side by side with buildings almost ideal in sanitary construction and equipment stand others that defy hygienic laws in almost every respect. The purpose of the present paper is to relate some facts in regard to the actual American schoolhouse, and to describe briefly an ideal one.

Investigation of the condition of Boston schoolhouses was begun in 1895 by a committee of the Collegiate Alumnæ, and reports were made by them, and also by an expert committee appointed by Mayor Quincy. Some of the results of this investigation, cited from an article by Mrs. Allen Upton Pearmain, chairman of the committee, are as follows: Of ninety-five buildings over two stories high, only twenty-seven had good fire-escapes. One hundred and thirty-six buildings had an aggregate of 346 cesspools in playgrounds, cleaned irregularly, and those in connection with ten buildings were never cleaned. The Board of Health had repeatedly condemned the sanitaries in 126 schools, and of these twenty-two were old-style yard vaults. Only forty-two out of sixty-nine schools reported satisfactory ventilation. In sixteen buildings the ventilating shaft entered the attic, which in some cases was kept closed. Only thirteen buildings reported the required initial air-space, 250 cubic feet per pupil. Twenty-seven has less than 150 cubic feet per pupil. The law requires thirty cubic feet of air-

supply per minute. Six rooms were found that supplied less than eight cubic feet per minute, fifteen supplied from eight to nineteen cubic feet. Many rooms had insufficient or improperly regulated light. Some on account of the proximity of neighboring buildings reported not enough light at any time in any room.

Another member of the committee, Mrs. Richards of the Massachusetts Institute of Technology, estimated that if the laws were enforced as strictly in respect to schoolhouses as to private houses and places of business, there would be 20,000 children on the streets of Boston on account of the closing of unsanitary buildings. The expert commission appointed by the Mayor made a similar report. They referred to the use of certain school buildings as a disgrace to the city, and said:

"Inside the buildings are constantly met conditions showing lack of expert knowledge and judgment in permitting certain things to be done in the way they are, and in continuing old methods that would not be allowed an instant in progressive private work. If cases like these came within the observation of the Health Department, in their inspection of private houses, alterations would be peremptorily ordered, with the alternative of closing the building against all occupation."

Since the report of the investigation of the Collegiate Alumnæ many improvements have been made, but the conditions are still far from ideal.

Following the example of Boston a committee of the School Association of the city of Buffalo made a similar investigation. This committee, of which Dr. F. M. McMurry, now of Columbia University, was the chairman, reported schoolhouses "for years overcrowded," buildings rented "practically unfit for school use," twenty-five annexes in use, "more than one-half of the schools using rooms that were never intended for that purpose,"—attics, halls, basements, cloakrooms, etc., lack of seats, more pupils than desks, lack of air space in the majority of rooms, in some rooms not more than sixty-eight to eighty-three cubic feet per pupil, instead of 250 required, seventeen schools with no system of ventilation, insufficient light, wraps hung in the schoolroom, few adjustable seats and desks, and those in the same room usually of about the same size. The report of individual schools shows the defects more conc
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The places where these investigations have been made are representative American cities. We cannot suppose that Boston, Philadelphia, Buffalo, Baltimore and the rest are sinners above all the cities in this country. The reader of these reports who imagines that the sanitary condition of schoolhouses in his own neighborhood is any better, must be endowed with remarkable optimism. One should not be misled by the reports of superintendents. Naturally they describe the new buildings erected and note their model features. And the community is often led to believe that all the schoolhouses are satisfactory; for the report as a whole makes a good showing. When one cites facts like those given in this paper, some one is likely to point to the improvements that have been made and the excellent schoolhouses built. All this is true enough. Such school buildings are found in most of our large cities. It is a pleasure to contemplate them. But it seems absurd to ask, what all this has to do with the subject we are discussing. The excellence of light and ventilation in the model schoolhouse, recently built, does not ensure the eyesight and health of the children in the old, ill-kept, unrepaired house.

So much for "the big red schoolhouse" of the city as Mrs. Howe of Buffalo has cleverly named it. If we turn to "the little red schoolhouse" of the rural districts, the sanitary condition is often still worse. More than fifty years ago, Henry Barnard, the great pioneer of educational journalism in America, reported the results of his observation in a paper on "Schoolhouses As They Are." In this paper, afterwards expanded into a book on "School Architecture," Mr. Barnard presented facts showing the outrageous neglect and disregard of hygiene in the rural schoolhouses. In many rural districts his words would describe the schoolhouses to-day. I know of no extended statistics in regard to them; but observation and the reports of superintendents indicate that it is the exception to find a rural schoolhouse in satisfactory sanitary condition, and the atrocious sins against health in many of them would require a volume like Barnard's for adequate description.

The environment of the school child is often polluted by flagrant evils that flaunt defiance in the face of hygiene. Among such are over-heating, neglect of the means of ventilation provided, failure to regulate the light by adjusting the curtains, seating children in the draught from open windows or beside stoves or steam radiators, the promiscuous use of the same drinking cup or towel, the wearing of rubbers and of wet shoes and clothing in the schoolroom, the abolition of recesses, the confinement of pupils in the schoolroom under penalty of remaining after school if they go out, one long session with no lunch except candy from the street vendor or pickles from the nearest grocery, several flights of stairs to be climbed by growing girls, general disregard for cleanliness, illustrated in grotesque form by such so-called methods of cleaning as dry sweeping and the feather duster. How prevalent such evils are, observation shows. To illustrate but one point, the last mentioned: Mrs. Richards of the Boston Committee, reported, "The feather duster is ubiquitous, and it is the practice, sanctioned by the rules of the school committee, to stir up by its use in the morning the dust which has settled upon the desks, just in time to greet the pupils as they enter, and to fill their throats with the germs which cannot fail to be present under such conditions."

It is not strange that the percentage of disease is great. There are no extended statistics in regard to the health of American school children. That a large number are chronically ill or defective, every teacher knows. The investigations of Hertel, in Copenhagen, showed that thirty-one per cent. of the boys and thirty-nine per cent. of the girls were suffering from chronic disease. The commission appointed in 1882 to investigate the health conditions of children in the Danish and Swedish schools found a still greater percentage of illness. Of the total number of over 17,000 boys reported upon by the Danish Commission, twenty-nine per cent. were suffering from chronic illness, and of over 11,000 girls, forty-one per cent. Of over 11,000 pupils in the boys' higher schools, the Swedish Commission found forty-four per cent. chronically ill, and of over 3,000 pupils in the higher girls' schools, sixty-one per cent. The amount of illness is probably not as great in the schools of this country, but the few investigations already made show a large percentage, especially in the higher grades. Johnson, for example, found about eighteen

per cent. unwell in seven Indiana high schools. Engelmann's investigations indicate that the percentage among girls is very much greater. Impaired sight and hearing and other defects are common among children of both sexes. Tests of the eyes of many thousand pupils by Allport and others, show about thirty per cent. with defective vision.

The English physician, Dr. Chadwick, is reported to have said that he could build a city in such a way as to give any desired death-rate between five, or possibly less, to fifty or more per thousand annually. In like manner, it would perhaps be possible, if home conditions were hygienic, to build a schoolhouse and arrange a school that would give, within certain limits, any desired percentage of disease among the pupils. It is a pleasure to turn from the gloomy statistics cited above to note what has been done in the best schoolhouses to safeguard the health of teachers and children. In the foregoing pages facts have been presented; facts will be presented also in sketching an ideal American schoolhouse. Only those features will be mentioned which are actually incorporated in some school building in this country. In other words, the ideal to be presented is entirely practicable. While there is no schoolhouse of the kind in existence, yet for each feature the writer can refer those interested to some actual school building where it may be found; and approximations to this ideal are presented in the new high school buildings of Boston, Cambridge, Newton, Worcester, Fitchburg, Providence, Indianapolis and other cities, in the Providence normal school, and in a number of grade schoolhouses, notably the Bigelow school in South Boston.

THE IDEAL SCHOOLHOUSE

A very brief description of this actual ideal, as we may call it, would be as follows: This schoolhouse is situated on a slight elevation, the soil is natural, sandy, free from organic impurities, and well drained. No high buildings, noisy, dirty, or ill-smelling industries are near it. There are large grounds containing a school garden, shade trees, playground, etc. The building is entirely of masonry and steel construction, built of the best glazed brick, and practically fireproof. It is two stories high and built around a large quadrangle. At the grade level, rounds the buildi tain an air space coursed with holl impervious to moi partitions are of s framed entirely w Wide iron stairwa the several floors.

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*This plan has, perhaps, never been tried in a schoolhouse, but it is in suc Theatre in Boston. The register is vertical, being attached to the side of the seat, th

taries of the best modern style and ventilated through a special exhaust duct. The light in the class-rooms comes from the left, or from the left and rear, and is regulated by curtains of neutral gray green running up from the bottom as well as letting down from the top. All the exit doors open outward.

Especially noteworthy are the arrangements for cleanliness. The fresh air introduced to the heating apparatus is filtered through a screen of cheese cloth so that dust and other impurities are removed before it enters the fan room. The schoolrooms are really cleaned every day. There is no sweeping or dry dusting. The hardwood floors are cleaned every night by a carpet brush dipped in a special oil preparation. The oil makes the dust adhere to the brush, and in this way it is not stirred up, but removed from the room, and the floor is improved each time it is cleaned so that once a week it can be washed thoroughly without injury. At intervals the rooms are disinfected. The furniture is wiped off with a moist cloth. The chalk dust is reduced to a minimum by the use of the best crayons and by cleaning the blackboards, and the little dust made is caught in removable troughs. Thus each morning the children come into a schoolhouse actually clean. There are no free text-books used promiscuously, no slates, and no drinking cups; but on each floor is a drinking fountain where the children can drink from a continuous stream of water without the need of cups. Wire matting at the doors, individual lockers for wraps, and the facilities for bathing do much to insure clean clothing and clean children.

Space is lacking to describe details, but among other special features are the following: Electric lights in all rooms, telephones connecting each room with the office, chemical fire extinguishers in the corridors, adjustable seats and desks, special emergency rooms, and toilet-rooms on each floor, and in the playrooms in the basements warmed platforms where the children can sit and dry their clothing in wet weather.

Hygiene is regarded in grading the school, in the arrangement of the period of study and the like. Physical condition, as well as scholarship, is considered in the questions of promotions, and pupils with pronounced physical or mental defect are taught in a special school. The teachers devote half their time to class instruction, the other half to helping their pupils as individuals. There are outdoor recesses for free play and occasionally short pauses to relieve the strain of work at the discretion of the teacher. The aim, in general, is to make the conditions such that pupils may put forth their greatest effort and work at a high pace while in the schoolroom. Special physicians inspect the children every morning; dentists examine their teeth periodically; experts test their sight, hearing, and general condition; and perhaps most remarkable of all, a skillful engineer and an intelligent janitor have care of the heating, ventilation and cleanliness.

Every feature of this ideal—it should be repeated—is embodied in some existing schoolhouse. As it takes the virtues of many men to make the ideal man, so in takes many schools to make the ideal school. But if we could bring together and combine in one all the good features found in many schools scattered throughout the country, we should have one almost ideal in hygienic excellence, an ideal which, if not perfect, would have the merit of being real and all the influence of concrete example. It is surprising how good this composite schoolhouse is. Its excellence condemns the ordinary schoolhouse as no words could. It shows, too, the progress of school hygiene. Ten years ago cleanliness in a schoolroom, adjustable seats and desks, school baths, and the like were vagaries of university theorists; now they have concrete embodiment in the best schoolhouses. It will, of course, be argued that the cost of such a model schoolhouse makes an approximation to it impracticable. The natural answer to this objection is that any community that will weigh the health of the children against dollars and cents must be the product of a perverted system of education. But, if it be necessary to argue the question on a financial basis, the economic value of hygiene can easily be shown. Not only does the work of teachers and pupils lack efficiency when the conditions are unsanitary; and not only when disease is prevalent does the community have to pay for services that are not rendered because the pupils are absent from school, but epidemics are most expensive, and acute or chronic disease among the children of a family is the one cause of expense that drives the sober workman to despair. The citizen with economic perspective will demand that the conditions in the school as well as in the home

be made hygienic. And if the essentials of hygiene were considered first and ornamentation second, the cost would often be no greater than at present. It should be noted also that defective schoolhouses are very expensive. A most serious waste of public money is often due to an ignorant or criminal policy of building schoolhouses before devising the plan of heating and ventilating them, of rejecting the economical mechanical system of ventilation by fans because the initial cost is greater than that of a natural system, and, finally, of installing an elaborate and costly apparatus for heating and ventilating and entrusting it to an ignorant janitor or broken-down politician.

METHODS OF REFORM

Old schoolhouses are long-lived, and all means of remedying existing evils should be adopted. First, there should be an investigation of the facts. In every city and township a commission of competent persons should ascertain and report the actual sanitary condition of all the schools. The wholesome effect of such investigations has been shown in Washington, Buffalo and other cities referred to. Moreover, parents should feel an individual responsibility. If they would investigate the sanitary condition of the schools that their own children attend, evils like those mentioned above would not long be endured. The fact that parents are so busy trying to earn the wherewithal to give their children the conventional means of education that they have no time to look after their actual education is a practical paradox of our civilization.

Second, there should be regular and competent health inspection of the schools, not merely medical inspection to check contagious diseases and to care for the more serious cases of physical disorder, but inspection of the physical condition of all the pupils and of the sanitary condition of the schoolhouse and its surroundings, under the direction of a competent health officer having both power and responsibility.

Third, a knowledge of school hygiene should be required of all teachers and superintendents, and special courses in the subject should be given in all training schools for teachers. It seems absurd to be obliged to plead for this. A consensus of educators puts normal, healthy development as the end of education, but the one subject especially concerned with th
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THE RECENT GROWTH OF WEALTH

WHY THE ACCUMULATED CAPITAL OF RECENT DECADES IS GREATER THAN DURING ALL THE PRECEDING PERIODS OF HISTORY—THE ASTOUNDING RESULTS OF MODERN MACHINERY IN CREATING A SURPLUS FOR INVESTMENT AND EXPLOITATION—A REVOLUTION IN HUMAN CONDITIONS—THE PRESENT WEALTH OF THE WORLD

BY

CHARLES A. CONANT

ONE of the most remarkable phases of recent material progress is the ease with which the capital has been found for the many great works of modern civilization. Such works as railways, mills, water works, and other public improvements can be built only from capital saved beyond immediate requirements. These works increase the resources and producing power of the community when they are completed, but the capital employed in creating them is not immediately productive during the process and has to be saved in advance by the community. It was said by Bagehot that a citizen of London, in Queen Elizabeth's time, "would have thought that it was no use inventing railways (if he could have understood what a railway meant), for you would not have been able to collect the capital with which to make them." All this has changed since the efficiency of machine production increased many fold the productive power of the unaided human hand. The growth of capital has gone on in a sort of geometrical ratio. Every new invention which has increased the efficiency of labor has not only resulted in a definite saving, but this new saving has added to the funds for making new machines, which in their turn have added to the capacity for saving.

The rapidity with which the rate of saving has been increasing within the last few years has not yet apparently made its full impression upon the public mind. Much of the saving prior to 1870; and even up to within a few years of the present time, was in the nature of providing the machinery for later production. The invention of railways was a great step in human progress, but its effects only began to be seriously felt when the railways had actually been built sufficient to join together the great centres of production and exchange. This was hardly the case prior to 1870. The United States at that time had in operation 52,914 miles of railway, but the mileage was almost doubled up to 1880, when the amount was 92,147 miles, and was again increased more than two-thirds up to 1890, when it was 164,359 miles. The construction since that time has been less—only about 27,000 miles—because the country then became almost fully equipped with railway accommodations. The history of railway development in Europe is equally recent. In the whole of Europe, according to a recent article in one of the foreign financial journals, the railway equipment in operation doubled between January 1, 1875, and January 1, 1899, when it was 165,000 miles. The estimated railway mileage of the whole world in 1896 was about 445,000 miles, representing a cost of nearly $33,000,000,000.

The creation of railways is cited only to show the comparatively modern character of the industrial equipment of the civilized world. The figures regarding the development of various industries, so far as they are available, are equally striking. This is especially true of those industries which minister to the luxuries of civilized life and of the professional classes whose growth is possible only after the more pressing wants of the community have been provided for.

One of the most interesting demonstrations of the growth of capital is afforded by the tabulation prepared every year by the leading financial journal of Belgium of the issues of negotiable securities. These returns include government loans, new banks, railways and industrial stocks and bonds, and all other enterprises which are represented by securities on the stock exchanges. The point of view from which the figures are made up does not

relate to the ultimate success of the enterprises, but the fact that the capital is found in the investing community necessary to absorb the securities. The issues of these securities during the year 1900, in all the civilized countries, were equal to more than $2,000,000,000. This torrent of new securities has been pouring upon the European and American markets for many years without apparently exhausting the great resources in saved capital which seek such investments. The following table gives the total issues, the conversion of old loans into new, and the net new demands upon capital for a series of years. The French franc, in which they are expressed, is roughly equal to one-fifth of an American dollar:

ISSUES OF NEW SECURITIES

Year	Total Issues in Francs	Conversions in Francs	Net New Demands for Capital in Francs
1893	6,009,133,000	3,588,133,000	2,421,000,000
1894	17,814,668,035	12,641,200,000	5,173,468,035
1895	6,530,021,869	1,298,822,259	5,231,199,610
1896	16,722,067,625	7,593,013,475	9,129,054,150
1897	9,596,755,680	684,885,350	8,911,870,330
1898	10,542,830,820	1,640,054,160	8,902,776,660
1899	11,273,696,550	626,290,000	10,647,406,550
1900	11,863,434,990	.....	11,863,434,990

The exhibit afforded by the last column sheds the strongest light on the net annual savings of capital, because it represents the issues of securities which call for new capital. The conversions are simply the substitution of one security for another, usually at a lower rate of interest. Conversions went on upon a great scale when industry was stagnant from 1893 to 1896, because the supply of capital tended to outrun the legitimate demand and its owners bid against each other for safe investments even at low returns. Then came the great outburst of colonial activity abroad and the demand for new industrial enterprises at home, with the opening of Japan, China and Russia to railways and factory buildings, which have absorbed during the last few years the savings of the world, put a stop to conversions, and tended to stiffen the rates for money and capital in all the leading markets.

If the figures given in the above table were carried back to 1870, the rapidity of the growth of these issues of securities would be more apparent. The net new capital required to absorb these securities has gradually risen from about a thousand millions of dollars in 1894 to more than twice that sum in 1900.

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of the six years ending with 1900 called for capital of about $811,000,000 or nearly three-fifths of all the incorporations for 101 years. Even Japan increased the number of her corporations of various classes from 2,104 at the close of 1894 with a capital of $75,000.000 to 6,113 at the close of 1897, with a capital of $218,000,000.

One of the most sensitive indexes of the increase of capital is the growth in bank deposits. This has been one of the remarkable features of the progress of the last half-dozen years. In the United States, some idea of this progress is afforded by the figures brought together by Comptroller Dawes in his last annual report. From the close of 1894 the total resources of the national banks rose from $3,423,474,873 to $5,435,906,257 on February 5, 1901. Here is an increase in about six years of $2,000,000,000, or about sixty per cent. of the entire wealth of the country employed in this form in 1894. This is only a part of the growth in wealth in the form of bank deposits shown by available statistics. The total resources of state and private banks and loan and trust companies advanced from $4,138,990,529 in the summer of 1895 to $5,841,658,820 in the summer of 1900. Here, within five years, was an increase of about $1,700,000,000, or more than forty per cent. The following table illustrates the growth of the national banking system alone, in number of banks, volume of loans, and deposit obligations within the last quarter of a century. The figures are those of the reports made by the Comptroller nearest in date to the beginning of each year mentioned:

BUSINESS OF THE NATIONAL BANKS

Year	No. of Banks	Loans and Discounts	Individual Deposits
1875	2,027	$ 955,862,580	$ 682,846,607
1880	2,052	933,543,661	755,459,966
1885	2,664	1,234,202,226	987,649,055
1890	3,326	1,811,686,891	1,436,402,685
1895	3,737	1,991,913,123	1,695,489,346
1899	3,590	2,214,394,838	2,225,269,813
1900	3,602	2,479,819,494	2,380,610,361
1901	4,004	2,706,534,643	2,623,997,521

The impression is not uncommon in the United States that America has been the only country which has made rapid progress in wealth and prosperity within the past century, while the countries of Europe have vegetated. This idea is dissipated by a glance at such figures as those already given for the issue of negotiable securities and would be likely to receive a further shock by examination of European banking statistics. There are in Paris five great banks, with branches scattered over France and in the principal cities of other countries, which make frequent publication of their balance sheets. How rapidly the principal items of their business have grown within the past generation is indicated by the following table:

DEPOSITS AND LOANS OF THE PARIS BANKS
(In Francs)

Dec. 31	Deposits on Demand	Commercial Loans	Advances on Securities
1875	459,000,000	377,000,000	205,000,000
1880	755,000,000	484,000,000	356,000,000
1885	782,000,000	580,000,000	238,000,000
1890	1,115,000,000	848,000,000	280,000,000
1895	1,273,000,000	955,000,000	462,000,000
1897	1,603,000,000	1,141,000,000	635,000,000
1899	1,775,000,000	1,297,000,000	618,000,000
1900	1,894,000,000	1,493,000,000	747,000,000

There are several significant conclusions to be drawn from these figures. The increase of deposits by nearly four-fold in a generation tends to support the suggestions made in the opening paragraphs of this article, that the civilized world has only entered within the present generation upon the enjoyment of the fruits of its equipment in labor-saving inventions. Perhaps more remarkable, however, is the increase of fifty per cent. in deposits within the short space of five years. On the other side of the account—the loans and advances—the growth is even more striking. The total of these two items was 582,000,000 francs, or about $115,000,000 in 1875, and was 1,417,000,000 francs in 1895. Five years more have carried the item to 2,240,000,000 francs, equivalent to $435,000,000 and an advance of more than fifty per cent. within the short space of five years.

These figures of the growth of banking in France are insignificant, however, when they are measured against the growth of English banking. When the Bank Act of 1844 established new regulations for the Bank of England, there were but five joint stock banks in London, with aggregate deposits under £8,000,000 and total resources of about £10,000,000. The sixty private bankers, with perhaps an average of £500,000 each, brought up the total to about £40,000,000. Within a little more than a generation, or in 1880, the aggregate deposits in all the British banks were computed at £530,000,000—an

increase of more than 1,000 per cent. The amount rose on June 30, 1900, to £817,000,000 ($4,070,000,000), an increase of fifty per cent. within twenty years and a total far in excess of the deposits in the national banks of the United States at the same date. This represents a tremendous banking power and one which gave Great Britain for a long time the mastery of the finance and exchanges of the world. But within recent years banking power has increased at other commercial centres and the foreign banks of Paris, Berlin and Brussels, to say nothing of New York, have become strong enough not merely to compete with Great Britain in foreign lands, but to establish powerful branches which threaten English control of the money market in London itself.

An increase of 300 per cent. in deposits in all the great banks of the world since 1875, of 100 per cent. in commercial loans, and nearly 400 per cent. in advances, show that the people of our generation are living in a financial world unlike that of a generation ago. Even comparison with 1890 shows an advance of more than 100 per cent. in deposits and nearly 100 per cent. in combined loans and advances. The increase in advances of money on securities is an indication of growing wealth in more ways than one. It indicates not only an increased lending power on the part of the banks, but strengthens the conclusions drawn from the figures already presented regarding the growth in the fund of securities in the hands of investors and in the market. The securities employed as the guarantee for advances at the banks are of course only a fraction of those which have been issued, but the fact that nearly five times as many are now employed for this purpose as a generation ago and more than twice as many as ten years ago is an important index of the growth in the fund of surplus capital.

One of the indexes of the upward movement of accumulated capital, which is of special significance regarding the small savings of the masses, is the increase in deposits in savings banks. Savings banks are not commercial banks, employing their funds constantly in short time loans, and do not promote in that particular way the evolution of industry. They furnish, however, a substratum of available funds for more permanent investments, which tends to release the savings of capitalists and larger property owners for the more active operations of commerce. Savings banks existed upon a very modest scale a generation ago. The progress in the deposits has been phenomenal within past generations and especially within the last ten or fifteen years.

A recent tabulation made by a Swiss economist put the aggregate savings deposits of European countries at more than $9,000,000,000 in the summer of the year 1900. It is doubtful if the savings of a generation ago equaled one-tenth of this amount. In the United States the savings deposits of 1870 were $549,874,358, distributed among 1,630,846 depositors. This amount was multiplied by more than four in 1900, when $2,384,770,849 was distributed among 5,875,456 depositors. In Great Britain the deposits in 1872 were £19,318,339 in the postal savings banks and £39,679,880 in the trustee savings banks. These amounts had been multiplied on June 30, 1900, more than three-fold. Great increases are shown also in the French savings banks, and in Germany.

Even the impoverished people of Italy are piling up savings deposits at an astonishing rate. So also in Belgium and in Denmark. With a population of only 2,300,000, the latter shows an average of two bank books for every family and stands at the head of all countries in net deposits in proportion to population, amounting to $75 per capita. Switzerland comes next, with 325.30 francs per capita, and shows deposits of $193,000,000.

The remarkable figures given in this article are subject to some qualifications, growing out of changes in business conditions. The last six years have marked an ascending period in business activity, that may be checked within a few years by a counter movement, which will arrest the formation of stock companies and the increase in bank deposits.

That the real wealth of the world is increasing at an astonishing rate is evident from the growth in various forms of fixed capital and the large overflow of surplus savings into the undeveloped countries. The wealth of the United States is computed every ten years from the census returns. The total wealth in 1850 was put at $7,135,780,228 or $308 per capita, and in 1870 at $30,068,518,507 or $780 per capita. This amount rose in 1880 to $43,642,000,000, or $870 per capita, and again in 1890 to $65,037,091,197, or $1,036

per capita. Expert statisticians estimate that the amount for 1900 will be at least $90,000,000,000, or nearly $1,200 per capita. When it is considered that the latter amount represents accumulated savings of $6,000, or nearly four times the average of 1850, for every family of five persons, it is evident that the world is growing rich at an astonishing rate under the operation of machine production.

Another interesting proof of the growing wealth of the world is the amount which seeks investment in the poorer and undeveloped countries. So long as the increase of capital was readily absorbed at high interest rates in supplying new railways, mills, and public improvements within the countries where it was saved, there was little inducement to send money abroad. England was the first country able to employ her surplus capital in the development of enterprises in other lands. Occupying for nearly a century and down to the last generation an almost unchallenged position in this respect, her people have recently awakened to a change in conditions which is exciting some alarm. They find that their commercial and financial supremacy is challenged by other peoples in all directions and that the foreign investment market, from being substantially an English monopoly, has become a field of acute competition. In the language of a recent article in the London *Statist:*

"Other nations have become investors abroad. France has long been investing upon a very great scale. Germany, though not quite independent of other markets, yet has invested largely in Russia, China, Mexico, and so on. The United States quite lately has begun to invest. The London money market, therefore, is no longer what it was. The rest of the world does not look to it alone for the financial help it may require. There are other markets where equally good, or, at least, nearly as good terms can be obtained. And many great communities which were borrowers twenty or even ten years ago have now become lenders instead. Lastly, the more progressive countries have for long been laboring earnestly to build up great manufacturing industries by means of protective tariffs, of subsidies, of State education and State encouragement of every kind. Nearly everywhere manufactures have grown wonderfully, and in some cases have grown so much that we have begun to feel the pinch of their competition."

Germany has recently entered the foreign investment field upon an aggressive scale in Brazil, Central America and Turkey. It is not surprising that the German Emperor looks to the creation of a new Germany in Southern Brazil and that the American Government is watching closely the progress of German policy in that quarter of the world. Belgium has become one of the richest and most daring of investors in the foreign field. Large transactions in Russian securities take place constantly upon her stock exchange and she is sinking millions also in her colonial establishments in the Congo. The Congo railway during the six months ending with December last earned at the rate of about $2,500,000 per year. The capital of the sixty-five stock companies organized to do business in the Belgian colonies in Africa has reached $48,000,000.

These great accumulations of capital, seeking investment where it can be found on most profitable terms, afford the reason for the great outburst of colonial activity by the leading nations of Europe and the interest which is beginning to be shown by the great Powers in protecting their national investors wherever they go and in using all the resources of diplomacy and arms for securing free markets for goods and open fields for capital in China and other undeveloped countries. The rapidity with which surplus capital has increased within the last generation, and especially within a few years, finds explanation in the ratio which this capital bears to previous accumulations. Civilized people have always managed after a fashion, except in periods of failing crops or other abnormal disasters, to provide their food, clothing and shelter from their current labor. When the use of labor-saving devices permitted saving beyond what was required for these vital objects, the surplus became available for other uses. In a sense, everything saved above what was necessary to sustain civilized life in its simplest form might be held to represent surplus capital for investment in labor-saving machinery.

The law, which explains the phenomenal growth in the forms of surplus capital seeking investment indicates why the increase in this surplus will be rapid and striking in the years to come, as all forms of machinery increase in efficiency and the accumulated savings of previous generations become available for increasing the producing power of the generation on the stage.

UNDER THE MEMORIAL OAKS
On the University of California Campus

A MAGNIFICENT HOME OF LEARNING

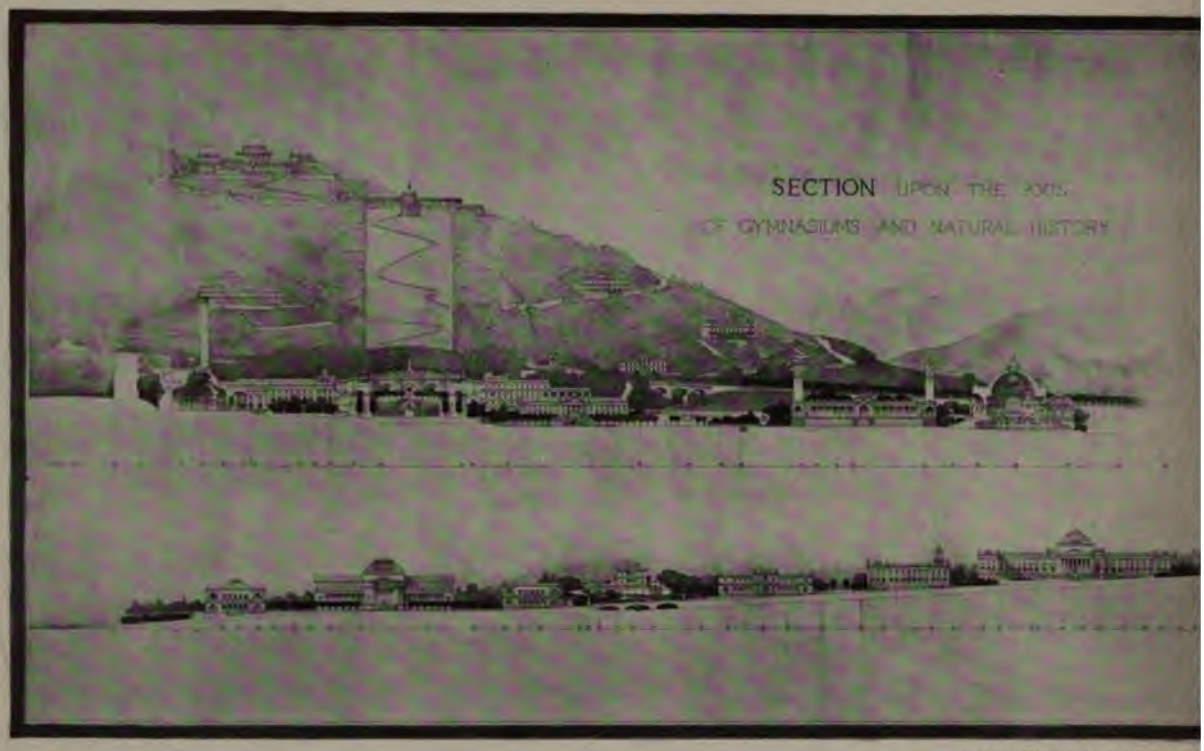
THE ARCHITECTURAL PLANS FOR THE NEW UNIVERSITY OF CALIFORNIA — THE MOST APPROPRIATE SITE AND THE MOST COMPREHENSIVE DESIGN FOR A GREAT SCHOOL THAT WERE EVER CHOSEN

BY

VICTOR HENDERSON

FOUR years ago Mrs. Phoebe Apperson Hearst invited the architects of the world to enter a competition, the object of which was to obtain permanent plans for the buildings and grounds for the University of California. When she informed the Regents of the University that she proposed to erect two buildings, but that she was unwilling to begin until a worthy general plan had been secured, and that it was her desire to bear all the expense of an international competition to secure a fitting plan, the University was quick to appreciate the far-seeing wisdom of the undertaking.

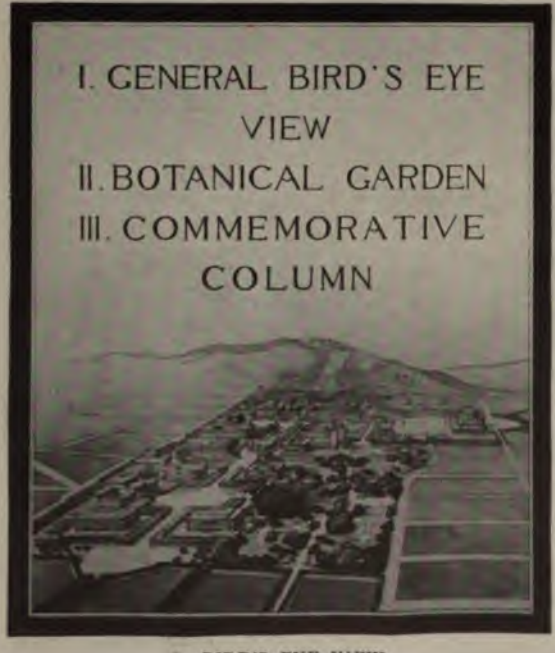
A board of trustees was appointed consisting of James H. Budd, Governor of California, J. B. Reinstein, a Regent of the University, and William Carey Jones, Professor of Jurisprudence in its faculty. After much consultation with architects and university authorities, a programme was prepared, printed in English, German, French and Italian, and widely distributed. An international jury, comprising M. J. L. Pascal of Paris, Herr Paul Wallot of Dresden, Mr. John Belcher of London, Mr. Walter Cook of New York, and Mr. J. B. Reinstein of San Francisco, assembled in the Royal Museum of Fine Arts in Antwerp, September 30, 1898, and after examining the hundred or more



THE NEW UNIVERSITY

From right to left, on the lower sketch, the buildings are Fine Arts, Library, Philosophy, President's Ho

plans submitted, awarded prizes to eleven competitors. The successful architects were invited to visit the University and to prepare revised plans for a second competition.



I. BIRD'S EYE VIEW

From the southwest corner of the campus looking toward the hills

In September, 1899, the jury met again in San Francisco, and selected the prize-winning plans. When the seals were broken and the names of the authors for the first time learned by the jurors, it was found that the winner of the first prize of $10,000, was M. Emily Bénard, of Paris, and of the lesser prizes of $4,000, $3,000, $2,000 and $1,000, Messrs. Howells, Stokes and Hornbostel, of New York; Messrs. D. Despradelle and Stephen Codman, of Boston; Messrs. Howard and Cauldwell, and Messrs. Lord, Hewlett and Hull, of New York.

M. Bénard, after a long stay in Berkeley and many conferences with the University authorities, undertook a revision of his drawings to fit the plans to the actual necessities of the site and the prospective needs of the University. In December, 1900, he submitted a design which the Regents formally adopted as the permanent plan, from which no important change may be made except with the approval of a self-perpetuating Board of Architectural Advisers, comprising the jurors and other architects of high reputation.

LIFORNIA AS IT WILL BE
nguages, Botany and Agriculture, Museum, Mining, Mechanical Engineering, a Dormitory, Observatory

The sketches prepared by M. Bénard are not complete working drawings, showing exact grade-lines and details of the construction of individual buildings, but a broad outline, indicating the general character of the architecture, the disposition of the buildings, their relation to one another and to the broad avenues, gardens, and open squares of the admirable composition. The execution of the plans will necessitate surveys and re-surveys, constant checking and correction, arduous study of details, and laborious fitting of parts to the whole. Each building must be planned in its relation to its immediate surroundings and to the whole composition.

To Mr. John Galen Howard of New York has been entrusted the first work of construction. He is now at work on plans for the Mining Building. As soon as the problems of arrangement, form and structure are solved, and the working drawings made, ground will be broken for this, Mrs. Hearst's noble memorial for her husband. By a year's residence in California some years ago, and by exhaustive studies in connection with the Hearst Competition, in which he was a prize-winner, Mr. Howard has familiarized himself with California conditions and with the site, which he declares the most beautiful university

III. COMMEMORATIVE COLUMN
At the head of University Avenue

II. THE BOTANICAL GARDEN
Looking toward the buildings for Natural History and for Mining and Mechanical Engineering

site he has ever seen. In March, 1901, he spent several weeks in Berkeley studying the grounds and consulting with President Wheeler and with Professor Samuel Christy, Dean of the College of Mining.

Mrs. Hearst's desire is to erect a structure as complete and beautiful as money and thought can build. This building will satisfy a vital need, for the University has to-day more students of mining than are enrolled in the mining course of any other institution in the world.

Other buildings will follow the Mining Building. It is one of the chief merits of the Bénard plan that it is flexible, that it can grow, and that the component parts can in large measure express the individuality of the department sheltered and of the architects who design the single buildings, without thereby losing their harmony with the whole.

The site of the University was selected a good forty years ago as the most beautiful and appropriate spot in all the country round. Berkeley is a village of 15,000 persons, on the eastern shore of San Francisco Bay, some miles by train and ferry from San Francisco, and directly opposite the Golden Gate. It is full of pleasant gardens and well-grown trees and sheltered on the east by a steep range of hills, which rise to their culminating summit of 1,900 feet in Grizzly Peak.

At the eastern edge of the town, and resting on the shoulders of Grizzly Peak, lies the University domain. The campus rises in a gentle, and then in a bolder slope, from a height of 200 feet to one of over 900. Two small streams, issuing from deep, ferny cañons in the hills, flow down across the grounds under noble groves of live-oaks, pines and bays. From November to May the campus is green and flowery, from May to November, a soft brown, save for the never-fading green of the trees. Snow never falls, and the air is sunny and fresh with ocean breezes.

Here on this unrivalled site, with its outlook over plain and bay and mountain, is to rise a picture complete in itself, cut off from all discordant elements, the new city of learning.

From the high hill-summit on the eastern edge of the campus, down the steep hill-slope as a terraced garden, and westward as a broad avenue traversing two great squares, is to run the main axis. The transverse axis is an ex-

THE CAMPUS OF THE UNIVERSITY OF CALIFORNIA

From Observatory Hill looking westward toward the Golden Gate

ON THE CAMPUS
Strawberry Creek under the bay trees

tensive open space, the northern half a botanical garden, the southern a stadium, linking the natural history group with the monumental gymnasium.

When the plan has been executed, one will enter the grounds at the western end of the main avenue, and advancing eastward toward the hills pass between a fine arts building on the north, and an auditorium and reception building on the south, and out upon the Library Square. The Library will face south, overlooking the finest grove of oaks on the campus. Advancing eastward one will pass between the Philosophy-and-Jurisprudence building on the north, and the building for History, Political Science and Pedagogy on the south, under an eminence crowned by the President's House—a dignified stone mansion now in process of erection—between the Languages building on the north and the Physics building on the south, and out upon an esplanade on the north side of which will be grouped the Natural History buildings, the Museum in the centre, with west and east wings devoted to Zoology and Mineralogy, and flanking buildings for Botany and Agriculture on the south, and Mining on the north. From the Museum one will look south between the Administration building on the west and the Civil Engineering building on the east, over the conservatory and botanical garden, and past the open stadium, with its flanking tribunes, to the Gymnasium, an imposing edifice whose northern front will descend in stone tribunes to the stadium. At the base of the steep hill-slope will stand the Mechanical Engineering building and central power station, on the north of the main central avenue, and at the south the Chemistry building. On the summit of the hill, 500 feet higher, will stand the Observatory. Habitations for the students, an infirmary, club houses, a restaurant, a military establishment, and various other buildings will be scattered in nooks and corners about the grounds.

To turn the dream city into stone will cost $10,000,000 or $12,000,000. No one expects to see the work near completion in less than a generation. Architectural masterpieces always grow slowly. But the plan is set, and whatever is done will be done right, and the

"THE FOOTBALL PLAYERS"
Bronze statue by Douglass Tilden, offered to the University first winning two Stanford-California games, and won by the University of California

LICK OBSERVATORY
A winter view of the Graduate Astronomical Department Building on Mount Hamilton

material University which is to be will be harmony and not a muddle. Most fortunately the material University of to-day still wears the clothes which were outgrown years ago. The present buildings, with few exceptions, are unworthy of the institution, and so it has been possible to plan the new University without any reference to present encumbrances, and as if the campus were wholly bare. The architect starts unhampered.

This architectural enterprise is of much significance for California. It means that the students of the State's University shall receive the inspiration of noble and beautiful surroundings. It means that a standard will be set for emulation throughout the West. It means that a great training-school for architects will be developed at Berkeley, for in no way can the training of architects be made so efficient as by permitting the student to have a hand in the erection of great and beautiful buildings.

In the past eleven years the number of students has increased fivefold. It is second in academic attendance among American universities, Harvard alone numbering more undergraduates. It is fifth of American universities in total enrollment, the number having passed the 3,000 mark. Its summer session for 1900 counted more students than the summer schools of any other American universities save Harvard and Cornell. Tuition is free, and men and women stand on an equal footing.

The relation of the University to the State is close and mutually helpful. Secondary education has been vitalized by the University's accrediting system. Since 1889–90 the number of California schools deemed worthy of accrediting has risen from thirteen to 110. The farmers' institutes, held in all parts of California, spread wide the latest rule of agricultural science. A system of university extension is developing rapidly in usefulness and scope. A department of irrigation has just been founded, with Elwood Mead, Irrigation Expert of the United States Department of Agriculture, at its head. This

action consolidates national and state activity. A department of dairy husbandry has been established, and a dairy school and experimental farm are hopes for the near future. The College of Commerce, the first of its kind established in the United States, promises to put forth trained men for careers in commerce, the consular service, or business. Through the initiative of the University, a Commercial Museum, closely allied with the Philadelphia Commercial Museum, has been organized in San Francisco, and will prove hereafter an invaluable laboratory for the College of Commerce.

An astonishingly large proportion of the students pursue the general or academic course, as distinguished from the technical or professional, last year 70.3 per cent., as compared with 38 per cent. at Cornell, omitting law and medicine. Nearly one-fourth of all the 2,300 students in Berkeley are registered in one or more Latin courses, a very gratifying proportion.

On October 4, 1899, the students gathered around the flagstaff to greet the new president, Dr. Benjamin Ide Wheeler. Since President Wheeler's coming the material university has prospered abundantly. In March, (1901), the State Legislature increased its income by $100,000 per annum, raising the total from all sources, including the income from special funds, such as that for the support of the great Lick Observatory and the Wilmerding Trades School, to $575,000 a year. Mrs. Sather has endowed a chair in classical literature to the extent of $75,000, established two book funds of $10,000 each, and deeded to President Wheeler in trust other property of much value; Mr. D. O. Mills has given $24,000 to defray the expenses of a two years' expedition from the Lick Observatory to an observing station in the Southern Hemisphere; William H. Crocker has sent an eclipse expedition to Sumatra, and Mrs. Hearst has presented a women's gymnasium worth $45,000, made provision for the annual expenditure of $30,000 or more on excavations and purchases in Egypt, Greece, Peru, New Mexico and the Philippines, for the archæological museum of the University, and in other ways has raised the total of her gifts to the University during the past four years to a figure exceeding $280,000.

No better forecast could be desired of the lines along which the immediate future of the University of California's growth will be than to cite the needs which President Wheeler in his first biennial report declared imperative. Among these are a library building suited to modern demands and capable of extension; library funds to the amount of $500,000; an alumni hall which shall form the centre of the daily social life of the students, alumni and faculty—this the alumni have undertaken to provide—an art building, to furnish shelter for objects illustrative of art, archæology anthropology, etc., schools of forestry, naval architecture and marine engineering, music and architecture; a department of archæology; a department of physical chemistry; a professor of the art of speaking; professors of Spanish, Russian and general linguistics, and lectureships and professorships for the College of Commerce.

And these things will soon come, for California is rich and generous and ambitious for the best in all things.

SUNSET AT THE GOLDEN GATE
As seen from the University of California Campus

A DAY'S WORK OF A TRAVELING MAN

BY

ARTHUR GOODRICH

THERE was a fumbling at the curtains of the sleeping-car, and a black voice came out of the darkness:

"Haf pas' six, sah, haf pas' six." Then with that added gentleness that accompanies visions of small change, "Pow'ful sorry, but ah knew you didn' wan' to sleep ovah, an' the city ain't twenty minutes ahead, sah."

The Traveling Man raised himself on his elbow and lifted the window-curtain. The rush of light about him made him yawn sleepily. He gathered courage and dressed, and with the pushing, anxious crowd was finally deposited at the already noisy station.

The hotel cab filled quickly, but he gave up his seat to a lady and took a street-car. He wondered what the day would bring forth, for he had much to do. He had had a week here on the way West, and had disposed of all his customers but three. It was only by impulse that he had hurried through his stay at Chicago a day early. He must leave that night to keep his itinerary.

He found half a dozen acquaintances in the lobby of the hotel, among them Sommers, a successful young fellow who was going out that morning. Sommers had nothing good to say of trade in the city. The clerk was cordial, and his favorite bell-boy told him all the news on his way up to his room. After breakfast he prepared for his day's work. Of the three men he had to see, he had small hopes of Brown. Brown was leaning toward a rival line. Smith, he thought, must still be fairly well stocked up. But Jones ought to give him a good order. He hurried over a mass of memoranda, noting the last orders of each of them, put some "literature" about a new article he was trying to introduce into his pocket, and started out. He decided to get Brown off his mind first.

The big store seemed unusually busy that morning, and the new buyer very terse when he finally reached him.

"How are you? I got your card." Then, after a slight pause, "Where are your samples?"

"At the hotel."

"Can you get them here about four this afternoon, and come yourself at eight to-night?"

"Certainly, sir."

"All right. Good morning."

The probabilities were that the buyer wanted his prices to use with his competitor. The possibilities were—but he would know in the evening, and he hailed a passing car. Just inside some one seized him and forced him into a seat. Turning, he found a fat, happy-faced little man who had tried to get him to speculate in surburban real estate on his last trip. Greeting was barely over when a great opportunity for investment suddenly occurred—by the merest chance, of course—to the little man, and he told the Traveling Man is a half-whisper of a wonderful suburb where land would jump from small to large value within the next few months. If he might only take an hour or two of the gentleman's time, if he could merely show him the property—of course, it was still unimproved, but there was a small fortune in it, a small fortune.

The Traveling Man thought a minute and then said without a smile:

"If you can find me at the hotel to-morrow afternoon at two-thirty—I expect to be through with my work here then, I'll go with you."

The real estate man beamed his thanks. His prospective purchaser gravely accepted the cigar he offered, said "Good-day" and was jostled off the car in front of Smith's. Smith's store never looked inviting. Smith was a promissory, twaddling, good-humored scoundrel who smiled and lied with equal grace. His stock-clerk was an old friend, however.

"Well, sir, I'm glad to see you," was the cheery greeting.

"Of course you are. Am I glad to see you?" and he gave the stock-clerk the real estate man's cigar.

"Which is to ask," the clerk answered intermittently as he lighted it, "Can I deceive Smith into giving you an order?"

"That isn't necessary. You haven't had anything for a year—that is, in any amount. If you'll look up any one of a half dozen things, I'll guarantee you can't find one in the place."

"Nor any demand for one either, my good friend. But you get the old man to have me look the matter up, and, of course, I'll see what I can find."

In course of time, the Traveling Man found the elderly gentleman to whom the stock-clerk had referred. He was welcomed effusively. The stock would be looked up immediately. Could he come in about two? He said he could, and was glad to reach the open air again. A few doors beyond he stopped in to show the latest addition to the line to an old customer, who gave him some encouragement "if the price could be pushed down," and then told him with great pride of his oldest son who was just leaving college. "He's going to be a lawyer—and a fine man, sir."

The Traveling Man looked doubtful, and hurried on to Mr. Jones'. He was greatly surprised to be told brusquely by that gentleman, whom he found free, that the stock had been looked into carefully and nothing was needed. He casually mentioned a few things Mr. Jones' stock of which he calculated must be low. The dealer turned the leaves of the great interlined stock book deftly. Yes, he had only a small number on the Traveling Man's last visit, but they had lasted pretty well. And when he was shown the new article, Mr. Jones shook his head and said that there was no call for that sort of thing. As the Traveling Man passed a far counter on the way out his old friend Jimmy, the boy, leaned over and whispered:

"Didn't give you anything, did he?"

"He shook hands with me and said 'Good-morning,' Jimmy."

"He's trying on L. & M.'s line for a while."

"L. & M.—So?"

"Of course, it won't last."

"Of course not."

He was stalled in a blockade of cars on the way back to the hotel for lunch, and walked part of the way. He sent his samples off to Brown's and rushed through a hasty meal. It was ten minutes to two when he left the table and called a cab. He had just told the "cabby" the destination, and given him suggestions on fast driving, when a soft-hatted youth with a note book rushed up to him.

"I'm from the *News*, Senator. Won't you give me in a word what you think about the state election?"

The Traveling Man unconsciously grew dignified as he smiled at the reporter.

"I should like you better, my boy, if you would call me by name," he said.

"I beg your pardon, Senator ————, I was in a hurry."

"Yes, and you're young. That will save you. Here is my card, and I want you to understand, young man, that I am a respectable traveling man." Then he added, as he saw the boy's consternation: "If you really want my views of the Ohio election, I'll write them for you after I get to New York. But you won't print them."

Taken for Senator ———! He was still laughing when he reached Smith's. It was just two, and Mr. Smith was busy. At two-thirty he was still busy, and at three. The Traveling Man was exasperated, but hopeful. It was after four when the little old gentleman, profuse with apologies, bustled out where he was waiting. They were talking discounts immediately. Mr. Smith laid great emphasis on the lowest quotations for large lots, and he went so far as to speak of controlling the city's trade for the line. The Traveling Man had a wholesome distrust of such talk and of Mr. Smith generally, but he was there for an order. He considered carefully, and then settled back on a discount fitting the large lots that had been suggested. Mr. Smith haggled for a few minutes longer. Then he picked an order, already written, from the desk and handed it to him. The Traveling Man looked at it casually. Then he read it again carefully.

"Mr. Smith, did you mean this order exactly as it is written?"

Mr. Smith assured him, somewhat nervously, that he did.

"And you understood that the prices I quoted you were inside, confidential prices on lots of twenty-five gross and upwards?"

His voice grew more stern with each sentence, though it was still quiet and even.

"And you wish to stipulate control of the trade, and give me an order like that! Well, Mr. Smith, my people don't care a snap of their finger for your trade; and as for this," and he tore the offending paper into half a dozen strips, "I'll leave this with you. Good day, sir."

He went directly to the hotel, and stopped at the desk for his mail forwarded from Chicago. He wondered what to say to the firm about Smith. His day of business had not been strikingly successful—yet. He had just added the "yet" when a small buyer came in and gave him a little order to supplement one he had given him previously.

After he had gone the Traveling Man went down to dinner, and found a little side table with only one other occupant, a white-haired, pompous gentleman who was in a great hurry. The waiter was somewhat slow, and the old gentleman, as he repeated his order, ostentatiously took a silver dollar from his pocket and placed it under a turned tumbler. The waiter accelerated his movements considerably. The Traveling Man had just reached his dessert when his companion arose to go. The waiter, who had worked faithfully, stood behind his chair. The old gentleman smiled cunningly, turned up the glass, slipped the silver back into his pocket, and stalked down the long room. But when the Traveling Man was done the waiter received his dollar.

There was a single row of lights burning in Mr. Brown's store, and at the back in the little office, the Traveling Man, as he entered could see the proprietor himself, working at his desk. Leaning over the counter under the lights was the buyer, figuring.

"Good evening, sir. You're late."

"Yes; I hope it hasn't inconvenienced you."

"No; given me more time. Now, sir, your best discounts on these numbers?"

Strewn along the counter were many of his samples. The Traveling Man hesitated. He believed that this man favored a rival line, and he had not forgotten his afternoon's experience. The entire price list, with half a dozen different discounts all calculated, was in his head. Which should he say? The two men faced each other for an instant, and then he began quoting steadily a moderate discount, veering its rate on the different articles to meet what he thought were the store's greatest needs.

"That is the best you can do?"

"Positively the best, sir."

The buyer wrote and figured for a few moments. In the little office the proprietor seemed hard at work. The Traveling Man lit a cigar. He was puzzled. Shortly the buyer began to transfer the results of his work to another paper, looking up once to say:

"There's a chair by the desk there. Sit down. I may be some time."

And still the man in the office worked on without looking up. The Traveling Man had nearly finished his cigar, and had entirely given up guessing what was going to happen, when the buyer finished his figuring. He looked the paper over carefully once more, as if in final verification.

"I guess that will do," he said.

The Traveling Man looked at the paper, and went nearer the light. His heart was beating strangely. The joy of struggle and victory were on him. He forgot Mr. Smith entirely. Affairs which had been struggling, mutineering, deserting him all day, suddenly straightened into line and took their proper places. He was himself again. For the paper was an order, and a large one, running, he calculated quickly, for his mind was tense with excitement, over two thousand dollars. But all the buyer saw was the quiet gentleman with an unmoved, set face, who smoked for a few seconds in silence, and then said:

"Thank you, sir. I think these can be shipped by next week Friday."

While he was speaking, the little gentleman in the office had laid down his pen and now came up to where they were standing.

"Good evening, sir," he said. "Mr. James has given you an order. May I see it?"

The Traveling Man unfolded the paper and gave it to him, with inward reluctance. Mr. Brown looked the order over, and the buyer showed him the samples, explaining shortly his reasons for ordering in each case. The proprietor listened attentively, and the Traveling Man smoked steadily.

"I think I understand," said Mr. Brown at last. "It's a good order. You are to be congratulated, Mr. James. But, if you don't mind, I'm going to change it somewhat."

The Traveling Man groaned to himself.

"Yes," went on the proprietor, amending the order as he spoke, "you'll need more than fifty gross of these. Make it a hundred. And double this one, too, and this, and this——"

That was as far as the Traveling Man heard distinctly, for he went over to the desk at this juncture to light a fresh cigar. And the hand that held the match trembled badly. But he did hear Mr. Brown say at the end:

"And now, Mr. James, you're perfectly satisfied with this line?"

"Yes, sir."

"Then let us understand that, unless there are strong reasons to change, this is the line we carry from this on." Then turning to the Traveling Man:

"Good-night, sir. Ship the goods at your earliest convenience," Mr. Brown returned to his office.

The buyer helped the Traveling Man pack his samples, but neither of them said a word. While he did the final arranging, the buyer rewrote the order, which went to the Traveling Man's pocket without his glancing at it.

At the hotel every one seemed noisily, absurdly happy. The night clerk told him a really funny story when he asked for his key. He was ready for his train at ten o'clock. He wandered over to a desk and wrote a long, merry letter home and a short business note to his employers, telling tersely of his side trip, of the affair with Mr. Smith, and enclosing order from Brown & Co. He did not say that this was the largest order he had ever taken, though it would have been true. The real pleasure, after all, was in the fight of it rather than the reward. Nevertheless, he would like to see the inner office when that letter was opened.

He walked about the corridor for a few minutes, and finally landed in the billiard room. He knew some of the men, and they gladly made room for him. He was a player of no mean reputation. As the game progressed, spectators gathered. A rumor went to the lobby that some one was playing extraordinary billiards, and idlers crowded in to see. The Traveling Man's forces, all day at odds with each other, marshalled themselves into keen eyes and cool, accurate calculation. He made shots and runs he had never dreamed of attempting before, and played steadily to the end. The fame of that game has never faded at the hotel.

It was raining when he started for the train, but he didn't mind. He gave up his lower berth to an elderly lady, and climbed to an upper one at the end of the car. And just as the train rumbled out of the station he fell into that sound sleep which comes to a man who has done his day's work.

A SHORT GUIDE TO NEW BOOKS

The Helmet of Navarre.

Miss Bertha Runkle's first book comes close to being a model historical novel, stirring, dignified, with its strong, graceful men, and its graceful, strong women, a villain, despicable yet human, and its modest boy hero. For Felix Broux, quick-witted, sturdy and loyal, is the moving character of the book through all the adventure and romance. Even at the end there is more curiosity for what the boy did when the King beckoned him away than for the joy of the united lovers. He is a sort of boyish D'Artagnan, and Yeux-Gris, the three Musketeers thrown into one. The various denouements of incident are always startling and the suspense is held well up to the last; but there is a total lack of the theatrical, tawdry movement of many latter-day novels of French History. A short view of King Henry is charming enough to make amends for its scantiness. The people are real men and women, strong and wrong and brisk and brave, all flesh and blood with loves and hates aplenty. The time and the place they live in are a perfect background, and every page brings the stir of new action. The love story, though religiously secondary in everything but interest, is done with a rare grace and delicacy. But the action, the zest of it all, makes the reader of these prosaic times itch for a chance at living a life, for a sword and a ladder, a real friend and a true love. The book is healthy and inspiring, a production of which both writer and publisher may well be proud. (Century. $1.50.)

A History of Criticism and Literary Taste in Europe. Vol. I.

Professor George Saintsbury is on the whole as well qualified as any Englishman alive to undertake this formidable task. The present volume dealing with classical and mediaeval criticism, displays impressively how extensive is his reading. It is true that he never bears his learning meekly. There are asperities both of style and of temper, which one wishes away. Nevertheless, students of literature and literary history everywhere must be grateful for this work.

Mr. Saintsbury's theory of criticism has always been dogmatically held. He believes that literature *qua* literature is that which gives pleasure by

its form, that "beautiful words" are its test, and that criticism is "the reasoned exercise of literary taste." Upon the ground of æsthetic theory, further than to state his own position, he declines to venture. The present volume is therefore the history of the art and practice of criticism, as thus defined, in Greece, Rome and the Middle Ages. It is a work of scholarship, for scholars, and is, if we accept the self-imposed limitations of the author, adequately and consistently done. (Dodd, Mead. $3.50 net.)

The Heritage of Unrest.

Miss Gwendolen Overton has written a vivid story of frontier American army life in the later periods of Indian fighting. A young girl whose Apache mother is dead and whose soldier father dies early in the story is married by her guardian, her father's friend. In various small ways her Indian blood shows itself and unconsciously embitters her husband's life. At his heroic death she turns immediately to a man she has loved long. They are happy for a time, but the "heritage of unrest" is hers, and she dies saving her husband's life. The author's manner would declare that she had steeped herself in Kipling. The heroine of the book only just falls short of being a remarkable character study. (Macmillan. $1.50.)

The Inlander

Mr. Harrison Robertson, a Kentucky writer, whose "Red Blood and Blue" recently attracted considerable attention, has written the story of a young man who foreswears Louisville society after being jilted by a member of it. The young man, Paul Rodman, is soon in love again, however, and gets married. His wife leads him back into society which almost talks the two apart. Eventually he finds that in spite of all that society can say or do his wife is a "rose of Sharon" as one of his friends puts it. The main interest in Mr. Robertson's book is, of course, in Paul's love-affairs. But we cannot help feeling interest in the exposition of Louisville society. There is not a single inviting character. The light he throws on it reveals nothing agreeable. On the contrary, he seems to have a great deal of affection for a group of characters in Southern Tennessee. To these latter people he is humorously kind and tender. His book is robust yet delicate. It has original force. (Scribner. $1.50.)

God's Puppets

Miss Imogen Clark lays the scene of this pretty story in colonial New York. A young English officer who is in love with his somewhat untameable cousin makes the acquaintance of a dried-up, scholarly little Dutch minister and his untutored daughter. Pretty little Annetje is in love with him at once, and the young soldier at last unwittingly brings ruin upon the house of his simple and kindly hosts. The Dutch characters and the Dutch atmosphere of the prim parsonage and garden, formal yet fresh and simple give the book its chief charm. (Scribner. $1.50)

My Autobiography.

Professor F. Max Muller's autobiography is a book which has its welcome assured, and it is a public misfortune that death cut its preparation short. It ceases with an account of Oxford as it appeared to the young German in 1848. The author observed no formality, and little method; his matter refuses to keep within the banks of narrative or recollections, but runs over in comment, opinion, anecdote. It is the best kind of talk, as to an old friend before the fire, given with entire simplicity and naïveté. (Scribner. $2.00.)

Crucial Instances

Mrs. Edith Wharton's new volume of short stories is of the finest workmanship. Cleverness and happy inventiveness are always present; and the work is better than clever. There is never a stroke or a word too much. Every clause brings its little fresh surprise and shock of pleasure, and it is hard to say whether the imaginative quality or the play of fine intelligence has the larger part in the charm of the work. (Scribner. $1.50.)

The Papacy in the Nineteenth Century.

The Rev. Lawrence Henry Schwab, rector of the Church of the Intercession, New York, has selected, arranged and translated this volume from a part of Friedrich Nippold's History of Catholicism since the restoration of the Papacy on the fall of Napoleon. The point of view is extreme, and sometimes leads to prejudiced statements; but the truth of its essential position, that the papal power has lately grown much more despotic, and that it has arrayed itself against modern progress, does not fit well the general spirit of religious tolerance which now colors Protestant thought. The book is written with too little narrative skill and distinction of style to be very easy reading. (Putnam. $2.50.)

The Classical Heritage of the Middle Ages.

Henry Osborn Taylor is the author of this number of the Columbia University "Studies in Literature." Its subject is so broad that it perhaps becomes cursory and general at times. Such a work was a very great undertaking. That the author has not spared scholarly labor the appended bibliography, the footnotes and the work itself abundantly shows. (Macmillian. $1.75 net.)

Pro Patria.

Mr. Max Pemberton will please those who like an exciting story unrestrained by the slightest regard for verisimilitude. The plot centres in an attempt on the part of the French Nationalists to tunnel the Channel and conquer England. If a tithe of the cleverness

which went into the amusing conversation of the earlier chapters had been spent in making a little less apparent the entire absence of motive with which most of the characters act in the latter part of the book, or in combing some of the hysterics out of the style, the total effect would have been better. (Dodd, Mead. $1.50.)

A History of the Four Georges and of William IV. Vols. III & IV.

Mr. Justin McCarthy with the aid of his son Justin Huntly McCarthy, writes these two volumes, completing a history of England for the last two centuries —or more exactly, from 1714 to 1887. Mr. McCarthy writes always with the journalist's instinct for a good subject. Vividness, picturesqueness, and unflagging interest are constantly present. Much of the work reads like Macaulay, though it lacks his scope. The attention is concentrated almost wholly on politics; neither constitutional history nor social changes are given prominence. No other history of this period is so readable. (Harper. $1.25 per vol.)

The Sentimentalists.

Mr. Arthur Stanwood Pier has worked out an interesting story of a sordid, scheming woman, whose saving grace is mother love; of the sentimentalist, her son, who is vain and insincere; and of a younger brother and sister, all from a Western town, who go to Boston with social aspirations. There are social jealousies, and financial troubles, and the bribery of a western Legislature. It is clearly told with a serious appreciation of the development of character. This is Mr. Pier's second novel and it is a book of good promise. (Harper. $1.50.)

Masters of Men.

Mr. Morgan Robertson's book is very refreshing. Briefly the story is of a boy, strong, generous, honest, good-natured in the main, but quick to take fire, withal primitive, who under a misapprehension is expelled from school, and then goes to sea. For a considerable period afterward life is but one long misapprehension for Dick Halpin—his nature, entirely run to strength, lacked the insight and subtlety which a lesser man, or one with education would have possessed, and this in connection with an odd twist given to circumstances by Providence complicated things badly for Dick. Finally he is "shanghaied" with his superior officer, whom he disliked utterly—another mistake—and the two men have an exciting but not altogether pleasing time. However it had the effect of broadening and sending Dick to fame and the girl he loved, eventually. It is a strong story, strongly written, possessing not a little of the breadth, openness and force of the sea, and in no part does it weaken. In a word it has all the fine vigor and healthfulness that a tale of the sea and manhood ought to have. (Doubleday, Page. $1.50.)

The Fanatics

The scene of Mr. Paul Dunbar's novel is a southern Ohio town during the Civil War and is well laid; the theme—the divisions and antagonisms which rent apart during that struggle neighbors, families and lovers—has plenty of possibilities; and the personality of the author predisposes us to interest in whatever he wishes to say on questions which concern his race. But dramatic conception is unhappily beyond his reach. The characters are conventional and their language extravagant, and the situations overstrained. With a little greater literary skill the result might have been different. (Dodd, Mead. $1.50.)

The Love Letters of Victor Hugo.

The love-letters of Victor Hugo will disappoint Peeping Tom. Hugo was an orphan at the time when the greater number of the letters were written and Mlle. Adèle Foucher, to whom he addressed them was the only living person for whom he had any considerable affection. The letters extend through the years 1820–1822. They are filled with pleading, expostulation and profession. But they have none of the intoxication that we might expect from a poetic soul. Each is more or less a repetition of the other; each says only one thing: that Hugo loves Mlle. Foucher. The two were married on October 12, 1822, two years and a half after they had confessed their love. Paul Meurice contributes explanatory comments to the present volume. They are as inadequate as they are ecstatic. (Harper. $3.00.)

The Opera Past and Present

Mr. William Foster Apthorp has written an historical sketch of the evolution of opera. He has considered only such schools, composers and works as contributed to this evolution, and in doing so he has regarded not their national functions but their universal influence. Mr. Apthorp begins with the work of the Florentine music reform in the sixteenth century and declares that the opera started (in theory at least) as a perfect exemplification of the principles of the Wagnerian music-drama; all that was lacking was a further musical development. He outlines this development through the seventeenth, eighteenth and nineteenth centuries, giving special attention to the tragic and romantic forms of opera, these being the more cosmopolitan and important, in his opinion. His book, which written in a lively, picturesque manner, is comprehensive and useful. (Scribner. $1.25.)

A Carolina Cavalier

Mr. George Cary Eggleston's new story centers about the guerrilla warfare carried on in South Carolina during the Revolution. A boy, who has just returned from England, and his daring sister are in love with another pair of young people whom their father deems impossible, and the suspense of their story

lingers through the book until a real hero who has done one wrong and a deep-dyed villain who never did anything else, are dead. The plot is rather conventional and commonplace. An interesting story for a lazy hour. (Lothrop. $1.50.)

Dog Watches at Sea.

MR. STANTON H. KING, superintendent of the Sailors' Haven, Charlestown, Mass., gives a simple account of his six years spent in the merchant service at sea and six years in the United States Navy. Although he has many hardships to relate, no wonder the author loves the sea, if all captains and sailors are as refreshingly kind-hearted as those we meet with in this book. There are but few striking adventures here, yet the everyday life of the sailor at sea and ashore is told so interestingly and intimately that adventures when they do come, tend rather to break the charm of the narrative. (Houghton, Mifflin. $1.50.)

When Blades Are Out and Love's Afield.

The REV. CYRUS TOWNSEND BRADY has written a revolutionary story of Colonial and British cross purposes in love and war. The Carolina campaign of Cornwallis is the back-ground for two mixed love-stories. The love affairs can be forgotten instantly, however, for they are too foolish to be interesting, but the shock of battle and the story of Gen. Green's defence catches the real war-spirit, and is strikingly good. (Lippincott. $1.50.)

The Prince of Illusion.

Each of the eight short stories in MR. JOHN LUTHER LONG'S book is pathetic. Each turns on something guessed by the reader but unexpected by the characters. In the title story, the blind boy of the tenements recovers his sight and discovers that he is not a beautiful prince; in the second, the poor artist does not at first recognize his Italian visitor although later he learns that she is his old love; in the third, the Pennsylvania German who is believed to be bewitched turns out not to be; in the fourth, the Japanese who proposes is not the wrong man but the right one after all. Aside from this distressing similarity these are remarkably pretty stories. That they are delicate one might expect from the author of "Madame Butterfly." The best of them are the three about the Pennsylvania Germans in which Mr. Long's touch is surest and most moving. The ridiculous dialect, the superstitions and simple emotions of these people make them peculiarly interesting. (Century. $1.25.)

Jocelyn Cheshire.

MRS. SARA BEAUMONT KENNEDY has written a stirring story, stirring on every page, but it is as wholesome and natural as it is exciting. It is an historical novel of the very best and most healthful kind. There is nothing fantastic or extravagant about it. It tells with a setting of historical accuracy the adventures of a brave and loyal soldier of the American Revolution, whose daring, whose misfortunes, whose true courage and whose charming love-story are the wholesomest material that fiction can be made of. The scenes are laid in the Carolinas, chiefly in North Carolina, and in New York harbor. The heroine is as charming as her lover is brave. This book deserves great success and a permanent place in our historical fiction. (Doubleday, Page. $1.50.)

The Strange Career of Roderick Campbell.

JEAN MCILWRAITH has traced the story of a canny old Scot and his nephew Touzle-top from the wars of the Pretender to America, and their part in the French and Indian wars. There is a pretty romance woven through the hardy life of the book. Roderick Campbell is a good character and the glimpse of war-torn Scotland is well done. Altogether it is an interesting story well told. (Houghton, Mifflin. $1.50.)

A Soldier of Virginia.

BURTON EGBERT STEVENSON has written a story of little weight, of slight plot, in a style that takes one back to Hugh Wynne through all the lesser colonial novels. The story centers about a strong young hero and his friend Col. George Washington. The dramatic tale of the fatal Braddock campaign is told vividly but in an historical way. The best touch of the book is the final ride and fight of the hero. The story is charmingly told and the romance is written in with a rare grace and dignity. One of the best of the latter day colonial stories. (Houghton, Mifflin. $1.50.)

The Diary of a Freshman.

MR. CHARLES M. FLANDRAU, who wrote "Harvard Episodes," is very keenly alive to the subtle humor in the life of a college freshman, and has succeeded admirably in passing his point of view on to the reader of his new book "The Diary of a Freshman." It is amusing, and descriptive of many new phases of college life, and, being truly indicative of the individuals and their customs which it deals with, serves as an agreeable wile-away-an-hour for the pessimist or the bored. It is valuable, too, as a realistic transcription of life at Harvard. (Doubleday, Page. $1.50.)

The Siege of Kumassi

LADY HODGSON, trapped with her husband, the late Governor of the Gold Coast, in the inland West African town of Kumassi by the sudden rising of the Ashantis last Spring, endured for two months the horrors of a siege. This starving handful of Englishmen in the Dark Continent, with one Englishwoman and a few hundred native troops, were preparing after a two months' siege, to cut their way out to the coast, which they never expected to reach. A small detachment was left behind

to hold out to the last, and was relieved on the evening of the day set as the final limit of their endurance. Lady Hodgson's book gives also some account of native manners and superstitions, and of the effect of English rule on the subject blacks. (Longmans, $4.00 net.)

The Niagara Book. This guide to Niagara Falls is technically adequate and at the same time is interesting reading. It is made up of a series of chapters written by various well-known authors—W. D. Howells, Frederic Almy, Mark Twain, Thomas R. Slicer and others of equal prominence—is well illustrated with full-page pictures, and inclusive of whatever relates to the Falls or their vicinity. It should prove to be of value to visitors to the Exposition, as it contains a guide to Buffalo giving much information as to locality, hotels, theatres, things to see, etc., etc. Altogether a timely book. (Doubleday, Page. $1.50.)

A Sack of Shakings. Mr. Frank T. Bullen's book of short stories, sketches and casual essays have the unmistakeable flavor of the sea. Most of them were first published in the *Spectator*, and no apology is needed for reprinting them. Some are fanciful, some humorous and realistic, and some touched with poetic imagination. Their subjects are as varied a lot as could well be got together—from Shakespeare and the sea to a modern battleship, or from sailor's pets to the story of an orphan cachalot; but all of them are salty, and crisp. (McClure, Phillips. $1.50.)

Betsy Ross. Mr. Chauncey C. Hotchkiss has taken the plot of a new play by H. A. Du Souchet as a basis for his novel but he has not "novelized" the play. He has written an individual novel and an interesting one. The plot centers about the little lady who made the first American flag, her sister and their love affairs. There is a villanous pirate who brings up visions of "Treasure Island" and glimpses of several well-known colonial characters. Evidences of haste and carelessness abound in the book, but it is a good story. (Appleton. $1.50.)

The Nineteenth Century. Mr. Havelock Ellis's satire does not celebrate the glories of the nineteenth century. The first feeling of most readers who lack the power of detachment is pretty sure to be one of angry dissent; but the author undeniably scores often. In form his book is a dialogue concerning a remote chapter in the history of primitive man, in the nineteenth century. Our religion, science, politics, social activities and industrial organization come under review; but the central criticism is our distorted sense of values and failure to cultivate the art of living, to which all knowledge should be tributary. (Small, Maynard. $1.25.)

Mistress Nell. Mr. George C. Hazelton who wrote the play Mistress Nell, has attempted to make drama into fiction. The book is interesting as an experiment and should prove something of a guide and warning to successful playwrights. Mr. Hazleton has practically cut his three acts of clever dialogue into a number of chapters and written a slight introductory paragraph to each chapter. Dialogue, written-in paragraphs, and an overdone attempt at atmosphere are patched together. A novel is not the result, but an interesting book of the play, which those who have seen the play will read. (Scribner. $1.50.)

The Good Red Earth. Eden Philpotts' new book will in no way detract from the reputation which his previous works have earned for him, rather, it will have the effect of confirming it. The story he tells is original and interesting, his scenery effective, his characters typical and real, his humor of a quiet kind, abundant—we would have nothing omitted nor added. But, even while we are willing to admit that it may be mere personal prejudice to think so, some of the nature touches—descriptions of time, place and effects—strike us as giving an impression of effort and words, instead of spontaneous feeling and words. This is a pity, because the book is otherwise of such uniform excellency that this one little speck in the fruit is particularly unwelcome. (Doubleday, Page. $1.50.)

King's End. Miss Alice Brown's story of a New England hill-town shows a practiced pen and a cheerful humanity. The New England element is not obtrusive, but a certain rarity of atmosphere, as of a place lifted somewhat above the low level of toiling earth, breathes pleasantly through the book. A rebellious, free-thinking blacksmith, a revivalist preacher and enthusiast, and a high-strung girl, all learn more or less perfectly that the acceptance of the ordinary human relations and social duties is after all the means by which the soul's cravings are best satisfied. A simple, healthy, out-of-door effect gives a quiet charm to the story. (Houghton, Mifflin. $1.50.)

According to Plato. Mr. F. Frankfort Moore has written an immensely entertaining and clever novel. The intermittent fires of epigrammatic brilliancy and satire light a double love story. The plot is ingeniously complicated, and moves forward as airily as a well-drilled ballet. Challenges to mirth come thick and fast. It would be a very tired brain that would not find diversion and refreshment in this witty and light-hearted comedy. (Dodd, Mead. $1.50.)

THE MONTH'S MOST POPULAR BOOKS

REPORTS from book-dealers in Detroit, Boston, Philadelphia, Los Angeles, San Francisco, Louisville, St. Paul, New York, Pittsburg, Cleveland, and St. Louis and from librarians in Detroit, Jersey City, Brooklyn, New York, Hartford, Springfield, Chicago, Cincinnati, San Francisco, Los Angeles, Minneapolis and Atlanta have been combined into the following composite lists:

BOOK-DEALERS' REPORTS

1. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
2. The Visits of Elizabeth—Glyn. (Lane.)
3. Eben Holden—Bacheller. (Lothrop.)
4. Quincy Adams Sawyer—Pidgin. (Clark.)
5. Truth Dexter—McCall. (Little, Brown.)
6. The Heritage of Unrest—Overton. (Macmillan.)
7. The Life and Death of Richard Yea-and-Nay—Hewlett. (Macmillan.)
8. The Cardinal's Snuff Box—Harland. (Lane).
9. The Octopus—Norris. (Doubleday, Page.)
10. The Turn of the Road—Frothingham. (Houghton, Mifflin.)
11. A King's Pawn—Drummond. (Doubleday, Page.)
12. Babs the Impossible—Grand. (Harper.)
13. A Carolina Cavalier—Eggleston. (Lothrop.)
14. Crucial Instances—Wharton. (Scribner.)
15. That Mainwaring Affair—Barbour. (Lippincott.)
16. Ralph Marlowe—Naylor. (Saalfield.)
17. Betsy Ross—Hotchkiss. (Appleton.)
18. Up From Slavery—Washington. (Doubleday, Page.)
19. The Silver Skull—Crockett. (Stokes.)
20. When Blades are Out—Brady. (Lippincott.)
21. The Making of Christopher Ferringham—Dix. (Macmillan.)
22. In the Name of Woman—Marchmont. (Stokes.)
23. A Soldier of Virginia — Stevenson. (Houghton, Mifflin.)
24. Her Mountain Lover—Garland. (Century.)
25. Eastover Court House—Boone and Brown. (Harper.)
26. Sky Pilot—Connor. (Revell.)
27. Stringtown on the Pike—Lloyd. (Dodd, Mead.)
28. Graustark.—McCutcheon. (Stone.)
29. Rostand's L'Aiglon—Parker. (Russell.)
30. A Maryland Manor—Emory. (Stokes.)

LIBRARIANS' REPORTS

1. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
2. Eben Holden—Bacheller. (Lothrop.)
3. Eleanor—Ward. (Harper.)
4. Richard Yea-and-Nay—Hewlett. (Macmillan.)
5. The Cardinal's Snuff Box—Harland. (Lane.)
6. In the Palace of the King—Crawford. (Macmillan.)
7. Stringtown on the Pike—Lloyd. (Dodd, Mead.)
8. The Life of Phillips Brooks—Allen. (Dutton.)
9. Babs the Impossible—Grand. (Harper.)
10. The Life of T. H. Huxley—Huxley. (Appleton.)
11. The Darlingtons—Peake. (McClure, Phillips.)
12. Monsieur Beaucaire—Tarkington. (McClure, Phillips.)
13. The Master Christian—Corelli. (Dodd, Mead.)
14. The Redemption of David Corson—Goss. (Bowen-Merrill.)
15. Tommy and Grizel—Barrie. (Scribner.)
16. Rostand's L'Aiglon—Parker. (Russell.)
17. Sky Pilot—Connor. (Revell.)
18. An Englishwoman's Love Letters—Anon (Doubleday, Page.)
19. The Gentleman From Indiana—Tarkington. (Doubleday, Page.)
20. When Knighthood Was in Flower—Major. (Bowen-Merrill.)
21. Wild Animals I Have Known—Thompson. (Scribner.)
22. Literary Friends and Acquaintance — Howells. (Harper.)
23. Herod—Phillips. (Lane.)
24. Unleavened Bread—Grant. (Scribner.)
25. Napoleon, the Last Phase—Rosebery. (Harper.)
26. A Woman Tenderfoot—Thompson. (Doubleday, Page.)
27. Oriental Rugs—Mumford. (Scribner.)
28. The Visits of Elizabeth—Glyn. (Lane.)
29. The Heritage of Unrest—Overton. (Macmillan.)
30. Wanted, a Matchmaker—Ford. (Dodd, Mead.)

Eight books are mentioned in both lists. Five, "Alice of Old Vincennes," "Eben Holden," "Richard Yea-and-Nay," The Cardinal's Snuff Box," and "Babs the Impossible" are among the first twelve in each list and are, therefore, probably the most widely read books of the month. Three of these five are of American authorship. "Alice of Old Vincennes" has replaced "Eben Holden" as the unquestioned leader in both sets of reports. There are ten books not fiction in the librarians' list, and only two in the dealers' list.

A large number of the Spring publications have a place on the dealer's list—which accounts for the small number of books mentioned in both sets of reports. Two-thirds of the composite dealer's list are books published since January. All of them except Booker Washington's "Up from Slavery" are fiction.

Of these "The Visits of Elizabeth" seems to be the most popular, while "Truth Dexter," "The Heritage of Unrest," "Quincy Adams Sawyer," "The Octopus" and the "Turn of the Road" are all among the first ten. Three of these are on the list for the first time, two rise from a low rating last month, and one, well placed, has bettered its position considerably. Of the older books "Stringtown on the Pike" has shown the greatest falling off, while a number of books which have been on the lists have dropped out entirely.

In the librarians' list "The Life of Phillips Brooks" continues to rise, "The Cardinal's Snuff Box" has veered back to its former high place and "The Darlingtons" is a well placed new comer. "Babs the Impossible" is the only Spring book highly mentioned in the composite librarians' list.

More Public Land to be Opened

ABOUT 14,000 quarter sections of land in the Kiowa and Wichita Indian reservations in Oklahoma will be opened to settlers early in August. Thousands of applications have been made and there appears to be five or six persons ready to take up each claim. This has led the Commissioner of the General Land Office to contemplate a new scheme of allotment. Hitherto the settlers made a "run" for the homesteads. They lined up along the border on horseback, in wagons, or afoot; at noon a gun was fired and then they dashed helter-skelter into the new country. "Sooners" often got in ahead of time and picked out desirable farms at leisure. All this led, of course, to vexatious conflicts.

In order to avoid the dangers of a run in which so many people would struggle for so few homesteads, it is proposed this year to have a lottery. When the proposition was first made, people with unlucky stars were aghast, they declared that the idea of the government holding a lottery was preposterous, but there is no doubt that a lottery is the easiest and safest way of getting out of the difficulty. According to this plan applications will be placed in sealed envelopes. The envelopes will be gathered in a large cylinder where they will be mixed. The cylinder will revolve and after every third revolution a blind-folded official will take out one envelope. The quarter-sections will be assigned to persons in the order in which their applications are taken out.

If the land were equally rich all over the order of choice would make no difference. Unfortunately only a limited part is fertile. The settlers are not likely to get much of this, since there are four thousand Indians who are to have their pick before anyone else; a reservation is to be marked off near Fort Sill, school lands are to be set apart, etc. The Indians will unquestionably choose the cream of the country. As for the rest, farmers who may happen to acquire part of it, are, according to Col. Randlett, the Indian Agent, who knows every part of the ground, likely to be disappointed.

It is not a good farming country, says Col. Randlett. It is a cattle country. To be sure, there are portions of it where farmers have done very well, but these portions are not extensive, and what with the Indians in possession they will not exist for newcomers. Large herds of cattle have recently crossed the border from Texas, and have grazed along the slopes of the Wichita Mountains where the pasture is excellent. Grazing, indeed, has many prospects, farming few.

As these lands pass into private hands, many of the unsettled families of the West will doubtless acquire permanent homes in them. To most of these families it probably makes little difference whether their bread is won by following the plough or riding the range, so that they will not quibble over the character of the land, even if it is not all that it night be.

Evidences of Postal Progress

STATISTICS such as those of the Post Office Department, lately made up for the quarter and the year ending with December, have more than their mere localized significance. Postage stamps, as well as ploughs, pianos and bicycles sell more rapidly in prosperous times than in months of financial depression. It is, therefore, an added witness to the well-being of the people that the postal issues in the last quarter of 1900 showed an increase of more than ten per cent. over the similar quarter of 1899, and that in the three years from 1897 to 1900 there has been an improvement of twenty per cent. Instead of 1,490,773,498 pieces of stamped paper—including stamps, stamped envelopes, postal cards, etc.—issued in 1881, there were 5,283,687,010 in 1900, and the total expenditure of the people during this period, in which the population has grown fifty per cent., has increased nearly 200 per cent. The individual spent $1.30 last year for postage against seventy cents nineteen years ago. The postal issues for the last quarter of 1900 reached a face value of nearly $800,000 more than in any previous quarter. In Europe, too, the people are using the mails more than ever before.

That the sale of postage registers general trade conditions is made evident by a comparison of the annual records of the last decade. The

steady growth stopped short in 1894, and both the number of pieces and the total face value were much smaller than in 1893—the number of pieces being smaller than in 1892. In 1895 the total was larger, but still was considerably smaller than in 1893. In 1896 it grew slightly, and in 1897 showed almost imperceptible improvement. But with the growing good times the ratio of increase advanced with leaps and bounds.

Other methods of communication, such as the telegraph and the telephone, are being more widely and commonly used yearly. The Postal Telegraph Company, for example, had 23,587 miles of wire in 1885, which carried 1,429,690 messages during the year. In 1898 it had 143,290 miles of wire, and sent 15,407,018 messages. The Western Union Company had 3,972 offices in 1870. In 1898 there were 22,210. The telephone service has grown up rapidly, and such inventions as Professor Pupin's new device show that its development is only beginning. Its increasing capacity and the lowering rate of expenditure at which service can be obtained will mean great growth in the next few years. It is hard to overestimate the impulse for universal progress these increasing facilities of communication measure.

An English Railway's Parcel Service

IN England the Great Eastern Railway has perfected a system of suburban parcel delivery that works admirably. From the outlying districts for a radius of 120 miles—an agricultral country in the main—the passenger trains bring into London and to the neighboring sea resorts all kinds of produce packed in boxes of definite size and shape which are furnished by the company at from four to eleven cents. The service fee is moderate, eight cents for less than twenty pounds, two cents additional for each five pounds up to sixty pounds, above which the fee is twenty-five cents. Stamps affixed to each package show prepayment. The company publish two pamphlets, one giving the names of producers who use the service; the other, the names of season-ticket owners who are in constant need of such produce. The success of the plan was immediate, and the service has been continuous. For 60,084 boxes in 1896 there were 112,104 in 1897; 135,860 in 1898; 147,431 in 1899 and 149,743 last year. The feeling of the company regarding the scheme's success may be found in the remarks of Lord Claude Hamilton, the manager:—

"The householder," he says, "sends his order to such farmers as he may choose for butter, eggs, poultry, vegetables and farm produce, generally. The farmer fills the order, packing the box himself and handing it over to the company for delivery. The consignments are carried by express trains, and are usually delivered on the day of transmission. Not only does the consumer get fresh garden products at a minimum price, but he also saves the middleman's London charges. The wholesale and retail men are eliminated." Another leading official said of the scheme:—"We have a tremendous residential population along the London end of our line, and this scheme was largely devised in its interest, as well as in that of the farmer. The farmer gets better terms for his product, while the reduction in cost to the public is very considerable. Our list of farmers, who have engaged to supply the London consumer, ranges over Cambridgeshire, Essex, Hertfordshire, Huntingdonshire, Norfolk and Suffolk. The farmers sell their produce at prices which would open the eyes of the average housekeeper, and, cheap as the farmers do it, they reap, nevertheless, a substantial profit, and there is absolutely no trouble attending the matter; it is easier for a housewife to send her order down to Essex or Norfolk than to go and buy at the nearest market. The farmers despatch promptly, and what, with our express trains and swift vans, the produce is at the housewife's door in a few hours."

But this is only part of the road's system. Parcels of luggage are carried from a home in London to a residence at any of the Essex, Norfolk and Suffolk watering places, for twenty-five cents, or the company will deliver from station to residence for either six or twelve cents, according to the location of the station, and from station to station at reasonable rates, running from eight cents up. For people who wish sea water for bathing purposes the Great Eastern brings water from Lowestoft, 117 miles from London, three gallons for twelve cents, twelve gallons for thirty-six cents. Some idea of the extent of the ordinary parcel service may be gained from the last reports of 3,800,000 packages yearly. The scheme in all its phases is one of great convenience, and means either economy or direct money making to every one concerned.

The Greatest Suspension Bridge in the World

THE second stage in the development of the new East River Bridge between New York and Brooklyn has been reached. The towers stand, in the main, complete. The heavy cable connection between them is a beginning toward the temporary foot bridges which will be used in the spinning of the cables. The work on this bridge is as delicate and exacting as it is immense, and is, so far, an engineering triumph. The stone piers have been sunk in rock 115 feet below water level and stand 335 feet out of high water. The four great cables will be spun from tiny wires by large forces of men working on temporary foot bridges—stretched at a cost of $200,000—and by four sets of machinery. Two

strands of each cable or eight strands in all will be constantly in the making. The individual wires will have a diameter of three-sixteenths of an inch and a length of 4,000 feet. It will take 282 of these to make a single strand, and, as there will be thirty-seven strands grouped in each cylindrical cable, the completed cable will contain a total of 10,434 wires. Each extremity of the cables will be fastened to forty steel bars built into solid masonry and walled in with blocks of granite. Work on the cables can continue only in calm weather, for high winds will make the temporary foot bridges unsafe.

From these four cables, when completed, will hang the entire structure. Each cable will be bound with heavy steel at intervals of twenty feet. To these bands will be fastened the twisted steel-wire rope suspenders which will hold the floor-beams. The cables are judged to be capable of supporting 200,000 pounds to the square inch. Each will contain 222 square inches. It is calculated that the bridge will be able to hold four times as much as the greatest possible tax upon its strength will be. The bridge will contain six railroad tracks, two walks and two twenty-foot carriage-ways. There will be, further, two bicycle paths, a striking proof of the real permanence of what was once considered a fad.

The East River Bridge will be the largest suspension bridge in the world. The old Brooklyn Bridge is its nearest rival. Great advances have been made since that earlier engineering feat was accomplished. New methods and more modern machinery have simplified much of the detail of the work. Lessons were learned at the building of the older bridge. The making of the first connection between the towers and the twisting of the great cables have both been planned and the first carried out on entirely new and unprecedented lines. The comparative dimensions of the new bridge with the Brooklyn Bridge will give graphically the size and capacity of the completed East River structure:

	EAST RIVER	BROOKLYN
Strength in proportion	4	1
Width	118 feet	85 feet
Total length of span	7,200 "	6,000 "
Channel span	1,600 "	1,595 1-2 "
Height of towers from water	335 "	276 "
Minimum length at centre	135 "	135 "

The last figures are true of the Brooklyn Bridge only at the centre point, but can be applied to the new bridge for 200 feet on either side of the centre.

The Striking Development of Automobiles

THE difference between the delicate, flower-bedecked toys that amused Newport when automobiles were new, and the tough machines that ploughed through one hundred miles of Long Island mud, on a rainy day, not long ago, suggests the great development of these remarkable vehicles. Two of the machines in the Long Island endurance test went over the course without a single stop, and ten out of the fifteen finished.

That was extraordinary work. It lacked the spectacular element of the test in which Pike's Peak was scaled, and for some reason it seemed less astonishing than the riding up and down inclines on the roof of Madison Square Garden. But, as a matter of fact, it was, perhaps, the most important test of the automobile that has yet been made. Unfortunately only gasoline machines competed, and the opportunity of comparing steam and electric carriages with them was thus lost.

With the increase of endurance and the perfection of motive power and mechanical parts, the automobile has grown popular. A crippled beggar in Paris, who formerly propelled himself by hand in a cart, recently bought a one-horse power machine and is now making money by running errands. A public service is to be established in Honolulu. Routes are being laid out in Madagascar. The King of England is having a car *de luxe* built in Paris. Socialists are to make a propagandist tour through Pennsylvania in a machine of their own. Emperor William has been offering cups for contests. The London and New York Fire Departments are both using autos and a self-moving fire engine has been in use for years in Hartford, Conn. The State Department of this country has requested our consuls abroad to furnish it with the rules governing the operation of automobiles in foreign cities. The list of significant things which show how the machine has been taken up is almost endless.

Aside from its mechanical development and its popularity, the most noteworthy feature of the machine is its adaptation to new uses. The pleasure and business uses are the primary ones. A novel use is its application to warfare. In France the War Office has requested the owners of automobiles to register them and to have them appraised, so that if they are needed in wartime the government will know where to get them and at what cost. The experiments in the French army have been very satisfactory. A number of machines have been used by the British in South Africa as freight-carriers, and it is said that the Russian authorities have decided to give them a trial as carriers of land forces. Ordnance makers in Germany have invented automobile gun-carriages with rapid-fire cannon. History will be modern, indeed, when it is made on wheels.

For peaceful times, manufacturers will continue to follow the less unusual lines of development. The large amount of capital which has been invested involves a wide exploitation of the machine. Every opportunity of increasing its power and usefulness will be taken. This means better urban service, possible 'bus connection between

city and country, enlarged range of business deliveries, decreased cost of operation, simplification of parts with the introduction of the interchangeable system, greater ease and comfort in running, and all those other things that will make the automobile what one sometimes dreams of its becoming.

To-day all the types show a vast improvement over what they were a few years ago. Electric machines are now provided with improved batteries decreasing the weight and extending mileage. Their simplicity permits their use by coachmen and others who are not trained machinists. The steam machines have been strengthened and provided with automatic devices relieving the operator of care. The gasoline carriages have rapidly approached standard design, reaching a point of almost absolute reliability with inexpert attention, and have demonstrated their economy in operation. The gasoline type is particularly well developed in France, yet a buyer said to a maker the other day that he could get as fine an example of that type in New York as in Paris. It would not be extravagant to say that he could do as well with any of the other types. The automobile of whatever type is near enough to perfection to serve its master faithfully and economically for business or pleasure, the choice of types depending on the use for which it is intended.

The Massachusetts Trade Schools

THE trade schools established in several thriving Massachusetts towns by the legislature of the state have accomplished more than their warmest friends hoped for. In Lowell, for example, the excellence of the worsted machinery, which is said to be the best ever manufactured in America, is attributed to the direct influence of the Lowell school in the machine shops.

The legislature originally made appropriations of $25,000 to any city—where more than 450,000 spindles were working—that would start a school for itself. These appropriations were made for the purpose of improving the grade of work done by educated workers and of developing the system common in Europe where the craft has for years been educated in the trade schools. Schools in England, France, Germany, Russia and Switzerland as well as the Franklin School in Philadelphia, the pioneer in America, were studied by the Massachusetts promoters.

In the year in which the Lowell School was established, the city government appropriated $25,000 for it, matching the state fund; the next year the city voted $5,000 and the state $15,000; in 1898 the city appropriated $7,000 and the state $18,000; in 1899 the city gave $6,000 and the state $16,000; and last year the legislature appropriated $35,000 for a building which was made possible by a gift of the same amount from a private individual, Mr. J. C. Ayer. Lawrence helps Lowell to support the school which is managed by the Textile corporations of Lowell, Lawrence and the vicinity, the state interests being cared for by two special directors.

The Lowell School has been in operation for more than three years and although there are to-day similar schools elsewhere in the state, notably at Fall River and New Bedford, it is the most prominent because of its remarkable success. There are now more than seventy-five day pupils or special pupils who take the three years' course and are fitting themselves for superior positions, and there are more than 250 evening class students. The demand for the services of the trained graduates has been great. There were twelve in the last class and of these one is in a cotton mill, three are chemists, one received a custom appointment under the government, three are in machine shops and four are instructors. Of the forty graduates of the evening schools every one has improved his condition through his technical education.

The labor organizations feared at first that the schools might interfere with the limit they had put on the apprentice system. This led to some opposition on their part, which has since been withdrawn. Their present attitude may be seen in the fact that a leading labor organization official is a member of the Lowell school's board of trustees. The manufacturers, of course, welcomed the schools. To the Lowell school alone, they have given $85,000 worth of machinery.

The interest and pride which induced state, city and individual to coöperate in this way for the benefit of labor in order to increase its skill and thus its value, involved coöperation in a wider sense—coöperation for the general good; for the benefits of the schools as shared by all—mechanics, middleman and consumer alike.

Music as a Business

ANOTHER musical year is gone, a season full of interesting growth in many parts of the country. New festivals are scattering themselves in the by-ways and many of the older choral organizations are broadening the scope of their plans. Statistics—could they be obtained—would probably show that more money has been spent for music than ever before. Certainly the opera company was more extensive than any for some years, and that it attained a higher level of artistic success is generally recognized. A number of capable young foreigners have displayed temperament and technique in profusion.

There is a change working itself out in American music and American musicians—a change that is as yet scarcely more than a prophecy. A

higher ambition which demands musical culture is gradually taking the place of easy satisfaction with mere proficiency. More men are throwing their whole energy toward attaining artistic rather than commercial results—men of education. There is a higher ideal of sound musical scholarship in America than there ever has been. And what is most encouraging there is a growing faith in American genius trained in America by American teachers. The old world is invaluable for broadening and finishing the musician or the writer or the painter, but the building of voice and the perfection of instrumental technique should be obtained as well in America as elsewhere. This is the step which must come before we have a national music. There is undreamt-of future for American music as soon as the rank and file learn thoroughly that to play, to sing and, most of all, to write music is not a pastime or a matter of sentiment but an exacting profession with a long and hard apprenticeship, as soon as they learn the lesson of the man who through sheer force of repose, resource, control and subtlety of art has dominated the entire musical season.

Music as a business has had many disagreeable features. The fact that there has been no national canon of excellence has given ground for the experimenter and fakir. The people who have passed the stage of demanding foreign novelists to write their books for them, still grip the illusion that a singer must be made in Europe. If he is American born he would best say nothing of it but change his name to a foreign one and publish broadcast the story of his European success. He must wear the trade-mark "made in Italy" or "Germany." This has been in the past and lingers, in some degree, in the present. It is changing with the growing intelligence of our audiences. The strictly business aspects of the profession are anything but healthy. The musical manager or impresario is not a *necessary* evil. There would be as much and as good music if he did not exist, and musicians would have as many engagements. The middleman in music is not needed, and he lives on money which in the main his "artists" earn. He is not always satisfied with the amount specified as due him, and the musician is helpless. The papers who make music the single subject of discussion too often can be bought to say well of anyone who has money. Nor are instances rare of most open attacks in their columns upon musicians who do not care to advertise largely with them. Committees that judge brusquely of things musical are often incompetent, and ever since the singing birds quarrelled in the Old English ballad musicians have been severe in their judgment of their colleagues.

American music has long since differentiated itself from the art of any other nation. It is growing more and more of a type. It should be so, and the movement should be encouraged. There are Academies of Design and associations of artists without number. Authors' clubs are numerous although we have no "Academy." Edwin Booth founded "The Players' Club" in New York, which has meant much in the lifting of dramatic ideals. Organists' Guilds, Manuscript Societies and the rest have an undoubted place but there are few of them that thrive. There should be an organization of national purpose with ramifications reaching to all parts of the country, in which composers, singers and musicians who have won a high place in their art can plan together for progress. It would mean a better understanding and would give a new impulse to American music, and it would help to do away with some conditions which are keeping able men out of the profession.

Fifty Years of the Y. M. C. A.

A QUARTER of a million young Americans belong to the Young Men's Christian Association, which is to celebrate in Boston in June the fiftieth year of its existence in America. The first branch was formed there in 1851.

In almost every city in the country there is a building occupied by a branch of the association. Before the entrance of this building there is generally a bulletin board—or perhaps several of them—on which the attractions of the organization are set forth, with the words "Every young man is welcome" chalked in big letters at the bottom. These bulletin boards advertise inviting reading-rooms, well equipped gymnasiums, free educational classes, Bible classes, athletic fields—in short, everything that a healthy and honest young man could wish for.

Behind all is the secretary. The secretary is the first person one meets in joining the association and he usually manages to keep pretty prominent before one's eyes afterward. In small places in particular he is janitor, boomer, solicitor, instructor, preacher and entertainer all in one. To his energy is due the association's prosperity. In America he—or rather the thousand or more of him—has succeeded in having $20,000,000 worth of buildings erected, has established almost 1,500 branches, and has enrolled in his classes thousands of ambitious young men. He has labored not only to make the association agreeable, but useful as well, and in doing this he has imparted to it his own liberality and life.

Liberality and life are, indeed, the qualities that have characterized it and made it the vital factor for good that it is. They explain its success. Take, for example, its work in the army. In the Philippines there are no more popular tents than those of the Y. M. C. A. In them the soldiers find magazines and books, not to speak of pen and ink and paper. It would not be sur-

prising to learn that half the letters from the Philippines had come on Y. M. C. A. paper. The organization has made a place for itself by its thoughtfulness and activity among sailors (as well as soldiers) and college students, Indians, colored men, miners and boys—in fact wherever there seemed to be a chance for it.

But of course it finds its greatest opportunities in cities. This is true, too, in spite of the competition it experiences. The modern church with its billiard and smoking parlors, its reading rooms, etc., undoubtedly makes the attractions of the Y. M. C. A. somewhat less potent. Church organizations, moreover, are likely to be comparatively small and therefore more congenial than one to which practically everybody can belong. But the Y. M. C. A. has been extraordinarily popular, and if a certain class of its members has been diminished in number, another class not otherwise cared for has constantly increased. The boy who goes to a school which furnishes teachers and provides athletic facilities, and who belongs to a church which offers what remains, does not need the Y. M. C. A. But the boy who does not go to such a school and belongs to no such church, finds it a thing he cannot do without.

It is unnecessary to describe the details of the association's work. The gymnasiums and reading rooms are always open. In the evening when the stores are closed and young men are free, the class-rooms are ready for them to enter. In them they can take lessons in bookkeeping, designing, languages and other useful subjects. Then they can glance over the magazines or take a plunge in the pool, or do some other pleasant thing.

Amid the news of its basket-ball games, debate and the like, one is apt to forget for a moment its religious activity. But a glance at the bulletin boards on a Saturday night will serve to recall that phase. The titles of lectures, and the announcements of entertainments have been erased, and in their places are to be seen the names of distinguished preachers and popular singers who help to make each Sunday a day of worship. The services are usually open to the public which fairly flocks to them. More than 2,500,000 persons attended the religious meetings last year.

The work of the association is, of course, largely sociological. It improves its members and through them many others. How far this influence has spread is evidently incalculable.

This excellent society will, then, really have a good deal to celebrate when its representatives gather in Boston this month. But as much as anything else, it can afford to celebrate the resolution of its members to get the best there is out of life, and its own success in helping them to carry out their resolve.

An Example of Labor-Saving Mechanics

A STRIKING example of the development of labor-saving mechanics within the last two decades is apparent in the construction of New York's Jerome Park reservoir, which will be the greatest storage basin for the boroughs of Manhattan and the Bronx. 1,500 men, aided by machinery, are accomplishing as much as 9,000 men could have done in the early '80's.

There are five steam shovels, each doing in eight minutes all one laborer could do in ten hours. A curiously constructed plow clears a train of twelve cars loaded with dirt from the excavations in five minutes, a task 140 men would require an hour to perform. Not a team of horses is used in this work of excavating 330 acres of land, although from first to last twenty-one billion pounds of earth and rock will have been handled.

The railroad replaces the horse. Twenty-two locomotives and 280 cars utilize twenty-five miles of track in the transportation of loose earth and rock. These render unnecessary the employment of 1,915 men, a like number of wagons and 3,380 horses.

Instead of laboriously hauling the crushed stone from the crusher, twenty dump cars, each handling five wagon loads, are moved by engines to whatever point has been decided upon. By turning a lever at the end of each car, the contents is dumped beside the track. Crushed stone is the basis of the concrete with which the bottom of the reservoir is to be covered.

Each noon two hundred blasts are fired in the reservoir. The rock is loaded upon flat cars by derricks. Then it journeys to the crusher, and is transformed into the crushed stone that finds it final resting place by way of the dump cars. There are two stone crushers. Every day each of these performs the work of 500 men. In the rock excavation forty-two compressed air drills are utilized. Forty-two derricks, each operated by a twenty-two horse power hoisting engine, are used in loading the rock. Man seems a manikin beside such forces at these.

Bigger Steamers and Faster Trains

THE tendency to increase the bulk of ocean steamers again appears in four new American ships and a fifth recently launched at Belfast. Three of these are bigger than any of the older boats—bigger even than the *Oceanic*. Two of the three are built at New London, Conn., for the Great Northern Steamship Company, and will ply between Seattle and Oriental ports. The third is for the White Star line.

The New London vessels are essentially cargo boats, but they have also accommodations for passengers. Although seventy-four feet shorter than the *Oceanic*—their length is 630 feet—they have a greater width of beam and depth of hold, and

each displaces 33,000 tons. The *Celtic*, built at Belfast, is 700 feet in length and seventy-five feet amidships, and has a maximum displacement of 36,000 tons. The *Korea* and her sister ship, the *Siberia*, constructed at Newport News, Va., for the Pacific Mail, will be twenty-knot ships, with a length over all of 572 feet, a width of sixty-three feet, a depth of forty feet, and a displacement of 18,600 tons. They will be equipped both for heavy freight and passenger traffic, and they will be the largest and swiftest vessels plying between San Francisco and Hong Kong.

The largest steamer afloat in 1881 was the *City of Berlin*, now the United States transport *Meade*, with a length of 520 feet and a displacement of 8,000 tons. A decade later, in 1891, the largest was the *City of Paris*, 560 feet long and displacing some 16,000 tons. Thus, in ten years the dimensions of the largest vessel have more than doubled, and, with deeper harbor channels and longer and larger docks, the next twenty years are likely to see a continued, if not an equal increase.

In locomotive construction, also, greater speed and power are sought in the same way. Ten years ago the New York Central's famous "999," an express locomotive remarkable for the size of its drivers and its large heating surface, made possible the Empire State Express, which covers the distance of nearly 450 miles between New York City and Buffalo in a little more than eight hours. Rapid increase in the weight of trains, and the popular demand for fast trains, have lately made necessary a locomotive of a still more powerful type; and the Central has designed a locomotive weighing eighty-eight tons, that has a total heating surface of 3,500 square feet, and drivers six feet and seven inches in diameter. The new engine will pull a five-car train at the same rate that "999" pulls a four-car train, and, it is believed, will do it more economically.

Improvement in the Making of Butter

THE dairy and food department of the State of Minnesota has instituted a series of monthly butter tests which promise to become of particular benefit to that State and of general importance in all those States, east and west, in which butter is manufactured by modern methods.

Once a month all the butter makers of the State are invited to send samples to the State capital, St. Paul. These samples are to be subjected to rigid inspection by men of large experience. Every known test is to be applied, embracing some thirty points so that the work will be most comprehensive.

Prizes will be offered each month, though of no especial money value, the object being not to attract the mercenary but to stimulate the thrifty. At the end of a twelvemonth, the maker having the highest score for the year will be given a gold medal at the hands of the Governor of the State. The main objects of these tests are to maintain and to further advance the standard of butter-making in the State, and to educate those manufacturers whose butter is faulty. Skilled deputies will be despatched to the points where the butter is not of a high grade, and these officers will give the manufacturers instructions, free of all expense.

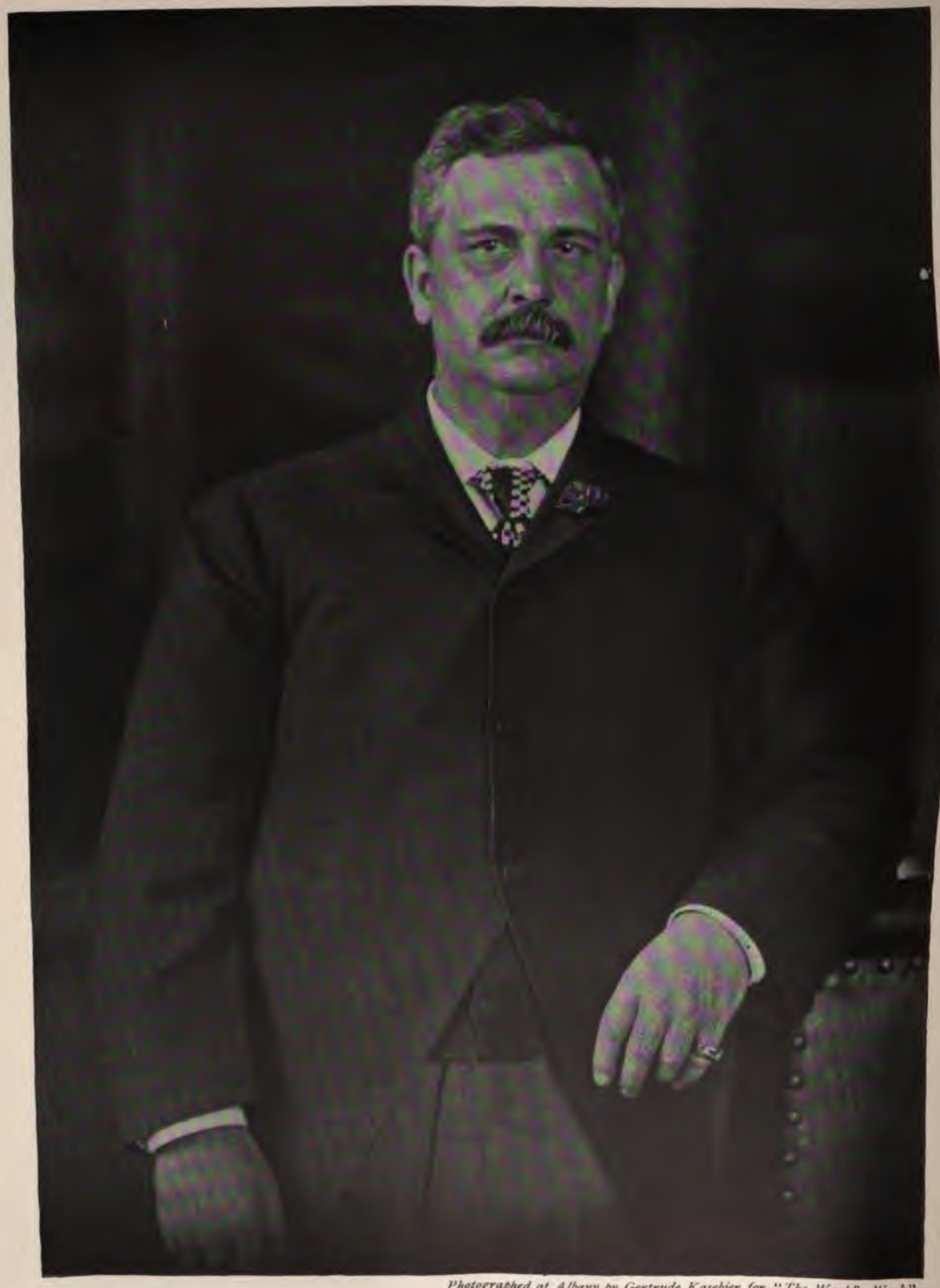
In the year 1898, at the annual meeting of the National Creamery Butter-makers' Association, Minnesota won the first prize, the sweepstakes; in 1899, the prize for the highest average of all butter shown; in 1900, the sweepstakes again, and in 1901, the sweepstakes and the highest average, as well as having the six highest averages. At last year's Paris Exposition a Minnesota butter exhibitor won the grand prize, the highest award, while the State as a whole won more gold medals than all the other states in the Union combined.

The intention of these enterprising westerners, however, is still further to advance the standard in this important feature of their industrial life. The plan seems practicable with a promise of fruitfulness.

Supplying Water to Boston

TO actually destroy two flourishing manufacturing villages, to reconstruct dozens of country highways, to move a large cemetery, to tear up and lay over again two miles of railroad, to build huge dams and dykes for the protection of a nearby town, to strip all vegetable matter from the soil of a large tract of land is what the Metropolitan Water Board of Boston is doing for the sake of water supply. The Nashua River is being confined into a large basin a few miles north of Worcester, for this purpose. Claims have had to be adjusted with the people dispossessed of their homes. Temporary railroad tracks have been laid. Work is now beginning on the dam, and five years have been spent already.

The lake will be six and one-half square miles in size and will have a capacity of 63,000,000,000 gallons of water. It will yield, even in a series of dry years, 105,000,000 gallons daily, which will make Boston's total supply under unfavorable circumstances, 173,000,000. Further parts of the system planned are an aqueduct twelve miles long to carry the water to the head of a storage reservoir building at Southborough and Marlborough. This reservoir will cover about two square miles and will hold 75,000,000 gallons of water.



Photographed at Albany by Gertrude Kasebier for "The World's Work"

HON. BENJAMIN B. ODELL, JR.

Governor of the State of New York

THE WORLD'S WORK

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The March of Events

THE decision of the Supreme Court in a part of the Insular cases, which was handed down on May 27th, sustains three far-reaching principles—

That the United States, being a sovereign nation, may acquire territory by war or by purchase,

That the acquisiton of territory does not extend the laws of the United States to its inhabitants except by special Congressional enactment; and

That it falls within the power of Congress to govern such territory as it sees fit.

The important matter of the decision is that "expansion" is constitutional, and that we may constitutionally govern our newly acquired territory as we have set out to govern it. Congress has prescribed a plan of government for Porto Rico and outlined a plan for the Philippine Islands. The important practical meaning of these decisions is that this policy is constitutional.

We are, therefore, now technically as well as practically committed to expansion; and the anti-expansion party, or parties, have nothing left to do but to conduct a political agitation, if they so choose. Public opinion, expressed at the polls, Congressional action, and now the decision of the Supreme Court have established the policy of expansion. The acquisition of new territory and its government are political questions which Congress may decide (and the people through Congress) as it will.

AN EXPLANATION OF THE INSULAR CASES

THE Insular cases divide themselves into three classes, as Mr. Griggs, who was the Attorney-General of the United States when they were argued, has explained:

The first class of cases raised the question whether the duties were legal that were collected under our tariff law on merchandise which was brought to the United States from Porto Rico and the Philippine Islands after the American occupation and before the ratification of the treaty of peace with Spain (April 17, 1899). Our tariff law was construed by the court to be applicable to these cases. In other words, Porto Rico and the Philippine Islands were still foreign countries, in spite of American military occupation, until the treaty of peace was ratified and their cession to the United States was thereby made complete.

The second class of cases raised the question whether the duties were legal that had been collected on merchandise imported into the United States from Porto Rico after the ratification of the treaty and before Congress enacted a law prescribing a tariff for Porto Rico. (The treaty was ratified April 17, 1899, and the Foraker Porto Rican tariff act

took effect May 1, 1900.) The court held that Porto Rico had now ceased to be a foreign country in the meaning of our tariff law, and that the duties which were collected during this period were illegally collected and must be refunded.

In these two groups of cases the court simply gave its interpretation of the application of the Dingley tariff act, and the decision involved no enactment since the Spanish war.

But the third class of cases raised the question of the legality of duties collected on merchandise brought from Porto Rico under the Foraker Porto Rican tariff act which levies fifteen per cent. of the Dingley act duties. This question brought the court to new ground. It had already decided that Porto Rico is no longer a foreign country, but is territory appurtenant to and belonging to the United States. Now if Porto Rico be territory of the United States, is the Foraker tariff act, imposing a duty on imports from it, lawful? In other words, has Congress the constitutional right to make a different customs and internal revenue system for Porto Rico from the system that applies to the states of the Union? The Constitution declares that duties, imports and excises must be uniform throughout the United States. Must they be uniform also in the territories or in territory that has been acquired? The court decided that the Foraker act is constitutional—that Congress has the right to levy different taxes in territory or in territories from the taxes levied in the states. This is equivalent to saying that Congress may govern such territory as Porto Rico in any way it sees fit.

Of course Congress must govern such territory in the spirit of the Constitution. It does not follow that the inhabitants of Porto Rico are "mere possessions" to be dealt with by Congress "unrestrained by the bill of rights." The decision means simply that the United States has power under the Constitution to acquire and to govern territory, to use Mr. Griggs's words, "without being required to treat it as an incorporate part of the United States." Concerning the safeguards that the Constitution throws around the people of these dependencies, Justice Brown said in the majority opinion in the Downes case:

"Whatever may be finally decided by the American people as to the status of these islands and their inhabitants, whether they shall be introduced in the sisterhood of states or be permitted to form individual governments, it does not follow that in the meantime, awaiting that decision, the people are in the matter of personal rights unprotected by the provisions of the Constitution and subject to the merely arbitrary control of Congress. Even if regarded as aliens, they are entitled under the principles of the Constitution to be protected in life, liberty, and property."

The court on the crucial question was almost equally divided, four justices on one side, five on the other. The majority were Justices Brown of Michigan, Shiras of Pennsylvania, Gray of Massachusetts, McKenna of California, and White of Louisiana—four of Republican antecedents and one of Democratic. The minority were Chief-Justice Fuller of Illinois, and Justices Peckham of New York, Harlan of Kentucky, and Brewer of Kansas—two of Democratic antecedents and two of Republican. The court, therefore, was not divided by a party line nor by a sectional line. Nor did the majority of the court reach its conclusion by the same course of reasoning, but by very different and sometimes even by apparently contradictory courses.

COMMON SENSE AND GOOD LAW

THE common sense of the nation had already made its way to the court's decision, and a large majority of the people had expressed their approval of it. Events have firmly fixed in the public mind as a natural and necessary course of action that we are bound to accept the responsibility for these islands, and that it is our duty so to govern them as to fit their inhabitants for self-government as soon as possible, and then to commit them to self-government under our protection. Such a course is dictated by common sense and by good morals — such a course, and no other. Such an aim, and no other, is in accord with the spirit of our institutions and with modern civilization.

The natural and logical nature of this conclusion becomes evident by considering the alternative. Any other course of action would be monstrous. If we were obliged to leave these untrained people to take care of themselves, it would be a crime against civilization; and it would be a crime against ourselves if our present responsibility for them required us to make them citizens of the United States and to put them in line for statehood.

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Justice McKenna | Justice White | Justice Brown | Justice Gray | Chief-Justice Fuller | Justice Harlan | Justice Brewer | Justice Shiras | Justice Peckham

THE SUPREME COURT OF THE UNITED STATES

If the decision of the court on the main point at issue had been different—in other words, if the Constitution, as it applies to the states, follows the flag—we should have been obliged to make all these untrained peoples citizens and to admit them, sooner or later, into the Union. To such a sacrifice of ourselves and of the Federal Union would the contrary doctrine have led. A subversion of our liberties? Then we should have suffered it in fact—an inundation from which American citizenship could probably never have recovered.

Again, as many times before, and as many times before by a narrow margin, the appeal to the law has brought the same response as the appeal to common sense. If we had not the power under our Constitution to do these things, and to do them in this way, then indeed would our Constitution be a check to the very genius of our race, and it would already have become an academic instrument for our suppression.

There is no more instructive matter for study by serious-minded men, whether or not they are lawyers or professional students of constitutional questions, than the briefs on these cases by the former Attorney-General, Mr. Griggs, and by the eminent counsel for the plaintiffs, and the opinions handed down by the court. Especially instructive and brilliant are Mr. Griggs's argument with its great wealth of historical research and Justice White's opinion. These briefs and these opinions are the part of our history that will be referred to in times to come oftener perhaps than any similar documents of our time. In them are set down in permanent form (much of it in attractive form) all the arguments and objections that have made the literature of expansion; and men who follow us may learn from these documents why it is that we who live now have the good fortune to live in one of the most important and perhaps the most interesting epoch of the Republic. We are "making history," and we may be sure of the historic value of our move forward by the despondent behavior of those who regard our institutions as fixed things and who would govern nations by formulas. It is, in fact, this sense of activity, of achievement, of nation-building, that is giving new life to our own political thought and giving us a more influential place among the nations than we have ever held.

THE TRUE MEASURE OF THE CONSTITUTION

EVERY philosophical student of institutions will recognize with thankfulness the proof given by these decisions of the true nature of the Constitution as "the most wonderful work ever struck off at a given time by the brain and purpose of man," as Gladstone called it, but for that very reason not an instrument whereby dead men's hands may rule us. Our written Constitution, as has many times been remarked, has shown itself a more elastic thing than the unwritten English Constitution. It is inconceivable that any human mind or group of minds should have been able in the eighteenth century to prescribe with definiteness a course of action for a constantly growing political society in the twentieth century. The true measure of the greatness of the Constitution is that it is so general and so comprehensive as to admit of unforeseen interpretations without a violation of its spirit and high purpose. The framers of the great chart of liberty made it fit the genius of the race; and they made it fairly interpretable for the sanction and for the support of great enterprises and new conditions which could not be foretold. But they knew, as no other group of men ever gave evidence of knowing, the genius of the race for whose development they planned. The true greatness of the instrument is that it is a chart for the development of a nation and not a code for the guidance of a single generation.

It is no wonder, nor is it cause for discouragement, that it has been at different times differently construed, and that the Supreme Court has reversed its own decisions and in one case at least reversed its reversal. No constitution, no institution of any kind, can be any better at any given period than the men who construe it or administer it. We are obliged to depend on men now living and on forces now at work in the world for all practical guidance; and every institution that does not yield to human development dies.

There is, therefore, no reason for permanent regret that the court was in these decisions so nearly evenly divided. It is better, perhaps, that it should have been so, better that the theoretical and over-conservative side should have had the support of so strong a body of dissidents. It can never be said that popular clamor swept the court along to its conclusion, nor that sectionalism nor mere party policies prevailed.

Yet as time goes on, it will probably become rapidly clearer that the decision of the majority was the only right decision, and we shall shudder when we recall the narrow margin whereby it prevailed. The contrary decision would have set us back as hardly any other conceivable event in our national history could have set us back, except the success of the Confederacy. It has happened many a time that at the parting of the ways the right road has hardly been distinguishable from the wrong road; but after we have traveled a little way doubt has disappeared.

Improper and unprofitable, therefore, is the criticism of the court or of any members of it that a few (fortunately only a few) of the respectable public journals have indulged in. It is always dangerous and always unfair to make comparisons of the personnel of any honorable body with the personnel of the same body at some fortunate previous time; for distance magnifies great achievements and dims contemporaneous criticism. Doubtless the Supreme Court has not now and has not had since his death as great a constructive mind as Marshall; but these opinions, both of the majority and of the minority of the justices, show learning and earnestness. Every one of them gave his best thought to the great subject; and no more could be asked. It is worth recalling that no present justice of a court has provoked such criticism as Marshall himself provoked from Jefferson. Yet both these great state-builders are rightly quoted in support of the spirit of this decision.

RHETORICAL CUBAN INDIRECTNESS

THE Cuban Constitutional Convention heard the report of the committee of its members who came to the United States, and almost immediately adopted the Platt amendment as an addendum to their constitution; but they incorporated with it their interpretation of the meaning of some of its clauses. The Platt amendment, it will be recalled, defines the terms on which the United States Government thinks it wise to permit the Cuban Government to begin its independent existence. The Cuban convention adopted it by a vote of fifteen to fourteen.

When the Cuban interpretation of the American conditions was received at Washington, the President and the Cabinet at once rejected it; for its plain meaning is reported to have been seriously changed. Our Government's decision was r
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changes—a further restriction of the suffrage or the retention by Congress of the power to annul bad territorial legislation there, as in Porto Rico. The Legislature, for instance, came near passing an act to rescind the quarantine regulations.

Since the annexation of the Islands to the United States the population of Honolulu has increased from about 25,000 to 45,000, and the industrial condition of the islands is reported to be good.

THE DEMOCRATIC "SPLIT" IN SOUTH CAROLINA

SENATOR McLaurin of South Carolina is stirring political discussion in the South as no other man has for a long time. He explains in this number of THE WORLD'S WORK the reasons why the Southern States should cease to be "solid" in national politics. He holds to the Democratic party, but he would have it move away from the Kansas City platform and keep pace with national development.

In a debate with his associate, Senator Tillman, who represents the Bryan creed of free silver and anti-expansion, Senator McLaurin got much the better of the argument at Gaffney on May 25th; and Senator Tillman, probably as a "bluff," proposed that they both resign their seats in the Senate and appeal directly to the people at a primary election. Senator McLaurin accepted the proposition and they wrote their resignations to the governor. The governor was away from home and during the next week nearly a dozen candidates for their places appeared; and there seemed a possible danger that both might lose their seats, as Senators Conkling and Platt lost theirs years ago in New York, when they resigned because the President displeased Senator Conkling in the distribution of Federal patronage.

But a surprising turn was given to this instructive comedy when Governor McSweeny on June 1st, refused to accept their resignations and tried to persuade them to spare the people a personal political canvass. The governor probably could not decline to accept their resignations if they had persisted, but the good sense of the governor's proposal was so great that Senator McLaurin withdrew his resignation; and of course, Senator Tillman will also withdraw his.

It would have been a superfluous and distracting and perhaps personally violent indulgence in political wrangling to carry on such a popular joint-debate. But the incident shows the courage of Senator McLaurin, and the discussion that it has provoked demonstrates the possibility at last of dividing Southern sentiment on national subjects.

"COMMERCIALISM" TO DIVIDE THE SOUTH.

SENATOR TILLMAN has invented the phrase "commercial Democracy," which he applies to Senator McLaurin in ridicule. But it is a phrase that is likely to have the experience of many other political nicknames and be accepted seriously. That the commercial wing of the Democratic party will soon be the stronger in the South no man doubts who can read the lesson of events, for the force that Senator Tillman calls "commercialism" is the next force logically to have control there.

Because the South has remained solidly Democratic we are likely to forget the changes in political leadership that have taken place in many of the states—changes so violent that in any other part of the union they would have brought party divisions.

Immediately after the days of reconstruction it was a group of military heroes that gained political control. At one time a very large proportion of the surviving officers of the Confederacy held political places. In South Carolina and in some other States these military politicians were identified also with the dominant social life of their communities.

In the course of time two changes of public sentiment began to assert themselves—always within the Democratic ranks. A feeling arose against giving all the offices to old soldiers simply because they were old soldiers.

Of course, too, every year the number of veterans became less. Then arose the Farmers' Alliance with its unsettling economic demands—an organization that was pitifully duped by the inflationists and the silver mine owners. It was to the Farmers' Alliance, captured by the free silver leaders, that was due the stubborn free-silver attitude of the Southern Democrats. But the Farmers' Alliance in some of the states, notably in South Carolina, took another political turn. The countryman was envious of the townsman, of the richer man, of the aristocrat who, as a rule, had held the political power. Tillman was nothing more nor less than the

protest of the countryman against the aristocrat of Charleston—a social protest that took political form.

Tillmanism and Free-Silverism have now had their period, and the newer Democratic doctrine of anti-expansion has been set at rest by the Supreme Court. The next force logically to claim political power in the South is, therefore, "commercialism"—not a sordid force, as Senator Tillman meant when he applied the name in ridicule, but the force of the great mass of well-to-do men of the new era of Southern industrial life, men who believe in sound money, in foreign trade, in diversified industry, and in contact with the rest of the world. Whatever be the immediate fate of Senator McLaurin and his movement, Senator Tillman has named the influence that will, sooner or later, bring the end of his own political control.

A SOUTHERN CANDIDATE FOR PRESIDENT

INTERESTING, although, perhaps, premature for 1904, is the talk of a concerted movement by Southern Democrats to nominate a Southern man for President. But surely there is no reason why the Democratic candidate, if a man can be found of the proper qualities, should not come from the South; for the Southern States cast the greater part of the Democratic votes. The problem is not a problem of sections, but of men and of principles. A Populistic candidate from the South would be no stronger and no weaker than the same sort of candidate from the West. But if an available Southern Democrat can be found who will stand for financial honor, commercial progress, and political liberality, he would give the party character and courage where it needs it most. There is now no sectional reason why we should not again have Southern Presidents. But neither is there any sectional reason why we should. It is all a question of men and of what they stand for.

"SCHOLARS AT FIVE CENTS A HEAD"

THE constitutional amendment that was adopted in North Carolina last year forbids an illiterate Negro to vote, but until 1908 it permits the illiterate white man to vote. Sixty per cent. of the Negroes of the state are illiterate; but, if the spirit shown by an enterprising teacher in one of the black counties becomes general, there will be a great change within a few
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departmental workshops of the Government are forthwith to be turned to the most practical educational purpose. These constitute an equipment for one of the most useful universities in the world. The Government spends annually in scientific work as much as $10,000,000, and employs 6,000 persons.

The educational utilization of this great equipment will help and dignify the service of the Government; nor will it conflict in any way with the work of any of our colleges or universities. It will supplement it most advantageously for them and for their students. And so simple is the plan that with competent direction the educational work will go on almost automatically.

Last winter Congress authorized the heads of departments, of bureaus, of laboratories, of libraries—of all the Government work of every kind—to admit student workers under regulations to be prescribed by the heads of these departments themselves. All these men, from the Cabinet officers down, have come cordially into agreement. Competent youth will, therefore, be appointed in these several departments to do such Government work as will give them an opportunity for advancement by original research in their special fields.

The Washington Memorial Institution, without buildings, except one executive building, without a formal faculty except the heads of departments and the specialists already in the Government service, will begin the truest kind of university work. Educated, picked men will be trained for the Government service in high places, for places in our colleges and universities, and for special careers. The institution will not confer degrees, but it will refer the graduate students back to the colleges from which they come for such degrees as they choose to give for the work done by them. In this way the active coöperation will be secured of all our best institutions of learning. Nor will there be any tuition fee. On the contrary, most, if not all, the students will receive the usual pay from the Government for the work they do.

The President of the United States, the Chief-Justice, the members of the Cabinet, the heads of important bureaus, the Librarian of Congress, the Secretary of the Smithsonian Institution and other such officials constitute the Board of Visitors—these and President Eliot of Harvard. The Board of Directors is a remarkable one.

THE BOARD OF DIRECTORS

Dr. Edwin A. Alderman,	President of Tulane University.
Prof. A. Graham Bell,	Regent of the Smithsonian Institution.
Dr. Nicholas Murray Butler,	of Columbia College.
Dr. C. W. Dabney,	President University of Tennessee.
Dr. D. C. Gilman,	of Johns Hopkins University.
Dr. A. T. Hadley,	President of Yale University.
Dr. Wm. R. Harper,	President of the University of Chicago
Mrs. Phœbe A. Hearst,	Regent of the University of California.
Mrs. Archibald Hopkins,	President of the George Washington Memorial Association.
Dr. C. Hart Merriam,	of the Department of Agriculture.
Dr. Cyrus Northrop,	President of the University of Minnesota.
Dr. H. S. Pritchett,	President Mass. Institute of Technology.
Dr. Geo. M. Sternberg,	Surgeon-general United States Army.
Dr. Chas. D. Walcott,	Director U. S. Geological Survey.
Col. Carroll D. Wright,	United States Commissioner of Labor.

Dr. D. C. Gilman, who has just retired from the presidency of the Johns Hopkins University, was chosen Rector of the Institution—a post that will give play to his unusual organizing faculties without the burden of administrative detail.

By this apparently simple organization a dozen different old and new plans for utilizing the Government's equipment for university work have been brought into harmony. There has been an agitation for such an institution ever since the death of General Washington. The equipment is perhaps without parallel in the world, and it ought to lead to a larger day in higher American academic work. Credit is due to many men and women for hearty coöperation; but the successful consummation of the plan was brought about in great measure by the unceasing and tactful labor of Dr. Walcott, Dr. Merriam, and Dr. Dabney.

AN INSTITUTION FOR MEDICAL RESEARCH.

ANOTHER great educational event, fundamental and far-reaching, will be the immediate establishment in New York of an institution for medical research by Mr. John D. Rockefeller. Of all methods whereby rich men may promote the public welfare this is sure to lead to the best results. No benefaction was ever more wisely directed.

The first gift is of $200,000 with which work may be at once begun, but it is announced that Mr. Rockefeller will liberally endow it as fast as money may be needed under the plan adopted for its development. The Board of Directors consists of Dr. Welch the distinguished investigator and professor of pathology at the Johns Hopkins University, Professors Prudden of Columbia, Theobald Smith of Harvard, Flexner of the University of Pennsylvania, Dr. C. A. Herter, Dr. L. Emmett Holt, and Dr. H. M. Biggs of New York—men of the highest attainments and of constructive ability as well.

The work of the institution will be to put to practical use, for the prevention and the treatment of disease, scientific knowledge that has already been acquired, and to make new investigations—ultimately to free a number of the best men from the necessity of teaching and of practice and to develop a great group of investigators.

Preventive medicine has reached the stage where it can almost see a way to eliminate most of the diseases that are yet scourges. Every great investigator feels that he and his fellows are on the very verge of new discoveries of revolutionary value. Expectation is in the air, and the progress that has been made since Koch and Pasteur began work justifies almost unbounded hope. It is probably true that no other field of human effort promises a richer yield. The result is that some of the keenest intelligences of the present generation are giving themselves to such research; and many more would like to give themselves to it.

The institution, therefore, has promise of incalculable help to the human race; it will give an opportunity for American scientific men to win distinction in our own country in the field that is perhaps more promising than any other in the whole range of research; and it will make New York City the home of one of the most notable institutions in the world.

A noteworthy event in medical education is the plan of the University of Pennsylvania to build immediately a new laboratory, to cost $500,000 or more, which is meant to be perfectly equipped for its uses. Other buildings for the medical department have been planned to give more room and to make the school as nearly perfect as possible in its teaching appointments.

FOR BETTER TEACHING AND BETTER RESEARCH

IT is well that neither the Rockefeller Institution for Medical Research nor the Washington Memorial Institution is to be a part of any of our universities. They can do their work better without such a connection—one as an institution for original research for the advancement of knowledge and the other for effective training by actual laboratory and field work. Original investigations of many kinds have been made at most of our best universities and it is useful as a method of teaching—up to a certain point. But in the effort to combine research and teaching, many a man who could have become a great teacher or a great investi
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These aristocratic Old-World and old-time comments on Mr. Carnegie's purpose show in a striking fashion how far the thought of many of the educated class in England and Scotland is behind the point of view of his "Triumphant Democracy." It is of a piece with the notion yet prevalent in England, regarding free libraries, that the best way to induce people to read is to make it difficult to get books.

But Mr. Carnegie, will in his own way help the Scotch universities to a better equipment, and prove that the most fortunate event that has happened for them in a long period was the embarking of a Scotch lad, somewhat more than half a century ago, for the iron-working region of the New World.

THE MAY LABOR STRIKES

THE leaders of many American labor unions planned strikes, small or large, to take place in May if the unions' demands were not granted. There were many local strikes, most of them of short duration; and there was an attempted general strike by the machinists, sufficiently serious to cause great inconvenience but not greatly to impair industry in general or to retard work of any sort over any very considerable area. The unions cannot be said to have strengthened themselves by the May labor-movement. Times are too prosperous and wages are too high and work is too easy to get for any concerted movement to meet a large measure of success.

The union-ordered strike of the street-car employees at Albany, N. Y., because of an alleged disparity of pay given to trip-men and because the company engaged non-union men, lasted for several days and led to violence. The sad result was the killing of two citizens in a crowd that the militia fired into. Public sentiment quickly asserted itself and the union and the company came to an agreement and peace was restored.

In the shops of New England trade-unionism for the first time gave any considerable trouble. A preliminary campaign was made with speakers and banners and placards, to stir the workmen to demand a nine-hour day with the previous ten-hour pay. Most of the employers refused to recognize the union, although they were willing to grant most of the demands of the workmen. In some workshops a strike was ordered but was quickly settled by the employers yielding to the men, without formally yielding to the union. But in many other shops the strike has caused great inconvenience but it has not led to violence. The men were idle, the employers either shut up their shops or ran them with an insufficient force, or took orders only for delivery at an indefinite date. The general result has been the dissatisfaction of many workmen. Positive gain—nothing; positive hurt—a weakening of the moral power of the unions and a loss of work and of profits in a prosperous time.

A STRIKE IN A LABOR UTOPIA

SEVERAL months ago the system of work at the factory of the National Cash Register Company at Dayton, Ohio, was described in this magazine. As one of the employees recently said, "Compared to the jobs I've had in other factories this is a regular paradise." Its plan of industrial betterment has been widely imitated with good results. It is both interesting and important, therefore, to learn the cause of the strike there by which about 2,500 employees were thrown out of work.

About a year and a half ago, at the request of some of its employees, the company decided to recognize union labor. The shop had previously been an "open" one—that is, union and non-union men were employed without distinction. In fact, one of these departments had from the beginning employed only union men; and, in another, out of thirty-two employees sixteen were "unionists." It was only natural that they should try to induce the company to recognize union labor.

But with this recognition by the company trouble began. There were shower-baths for the male employees. A walking delegate discovered that the towels furnished by the company were washed (at the company's expense) by non-union washerwomen. The men thereafter bought their own towels and had them washed (at their own expense) where they pleased. This was the first victory for union labor.

Then it was discovered that a spring on

one of the doors in the factory was of non-union manufacture. After a conference the spring was removed—the second union victory.

Then six union foundrymen were discharged because a change in a manufacturing process made their work unnecessary. This precipitated the strike. The union demanded that these men be taken back, and the company refused. The foundrymen went out; then the metal polishers. With two departments idle it was impossible to continue work; and a notice was posted that after a certain date the factory would be closed. And it is closed when this summary is written.

Happily all this sad foolishness affects only indirectly the success of an important experiment in industrial betterment. The mass of the employees appreciate the excellent conditions of work, and are simply the victims of a minority's arbitrary action. No progress lies in this direction surely.

OUR CLOSE KIN ACROSS THE SEA

THERE sat down to dinner in London on June 5th more men of colossal wealth than were perhaps ever before seated together; and the main point is they were English and American men of affairs. The London Chamber of Commerce invited members of the New York Chamber to dine with them, and a group of gentlemen from New York accepted the invitation and went over to London. So near are the two great English-speaking capitals become in time and in interest that an invitation to dinner across the Atlantic is no very unusual thing. Very sensible brief speeches of good feeling were made by Lord Brassey and Mr. Morris K. Jesup, the president of the New York Chamber. On the same day the Derby was won by an American jockey with an English-bred horse belonging to Mr. William C. Whitney, of New York. Nothing seems to be lacking, therefore, to make the kinship across the sea very close and cordial; for the Englishman accepts the "Yankee invasion" of his trade and of his sports with admirable philosophy—rightly, too, because the world is wide and there is trade enough for both; and, as for sports, it is the English quality to be game in all weather. Even the disaster to *Shamrock II*, the boat with which Sir Thomas Lipton will try to win back the America's cup, has not discouraged him and the race will take place this year, but at a later date than the day first set.

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jealousy; and they are now learning facts that they had before been indifferent to. Besides, the greater part of the Continent does dislike the English, and, therefore, in some measure the Americans, especially since the Atlantic is becoming practically narrower than the British Channel.

THE GREAT ARMY OF PENSIONERS

HOW an army grows by the time it reaches the pension office is indicated by the 43,874 applications for pensions that had been made by June 1st on account of the Spanish War; and how long the march on the pension office is continued after a war ceases, is indicated by the 466 pensions that were granted during the last eleven months on account of wars previous to 1861. These included two widows of soldiers of 1812, and 325 widows of men who served in the war with Mexico. Of course additions continue to be made to the pensioners of the Civil War, 35,308 having been added during those eleven months, more than 3,000 a month, more than 100 a day. The appropriation available this year for pensions is $145,000,000, and it will be practically all spent. A study of the huge pension roll of the government will demonstrate that the best insurance ever devised is secured by enlisting in the army—insurance during life and a young wife in one's closing years, who usually lives to receive dividends far on into the octogenarian period.

THE LESSENING LINE OF VETERANS

MORE grateful emotions are stirred by the ever-shrinking line of the veterans of the Civil War (more impressive now than ever by reason of its shortness) who, on every Memorial Day march to decorate their comrades' graves. There was a tender addition to the solemn observance of the day, made this year by Admiral Sampson. A reverent company of naval officers and men and women gathered on the deck of "Old Ironsides" in Boston harbor and with an appropriate ceremony strewed flowers on the sea in memory of the navy's dead.

The mass of town-dwelling people, perhaps with no abatement of gratitude to the Union soldiers, are turning Memorial Day into the spring holiday. They get, in the more northern states, the first clear breath of summer in the country; and it is becoming a day of out-door sports. In some of the Southern States the more purely memorial character of the day is receiving increasing emphasis, in honor of the Confederate soldiers.

THE END OF THE ALLIES' OCCUPATION OF CHINA

IT is expected that the Chinese court will soon return to Pekin, for the troops of most of the Allied Powers (English troops excepted) have withdrawn from Pekin and left only legation guards. So eager was the Chinese Government for the withdrawal of the troops that the demand for indemnity in the sum of $337,000,000 was accepted without delay and without protest. The proposal is that it shall be paid in thirty years (the Chinese prefer forty years) and that it shall bear four per cent. interest. Some of the European governments whose credit is not the best wish that the Powers jointly guarantee the loan. The United States Government agrees to a guarantee only to the amount of indemnity to be paid to us—$25,000,000. The amounts demanded by the several principal governments are approximately as follows:

TABLE OF SUMS DEMANDED AS INDEMNITY

Russia	$85,000,000
Germany	58,000,000
France	56,000,000
The United States	25,000,000
Great Britain	24,000,000
Japan	22,500,000
Italy	6,000,000
Belgium	6,000,000
Austria	2,500,000

Several other countries demand small sums.

Our Government was very eager to reduce the indemnity, and instructed Mr. Rockhill, our representative in Pekin, to do all in his power to effect a reduction. But the Chinese Government accepted the proposal of the Ministers with such haste that no change in the sum could be made; and there was no chance to secure trade privileges in the place of money payments.

The end of the Chapter of Occupation in the Chinese trouble, therefore, seems near. The several Powers are likely to ratify the Ministers' demands, and so far China has agreed to them all. Revenge has been exacted. But whether the problem has been solved well-informed men disagree. Sir Robert Hart thinks not, and General Chaffee is doubtful. Whether the central Chinese Government can resume authority and keep order throughout the empire and carry out the agreement with the Powers, and pay the huge indemnity, time will tell. But civilization will feel a great relief that at least this chapter of the trouble is ended.

The one large purpose of our Government that has so far been attained is the integrity of the empire, up to this time at least.

A PRELIMINARY STEP TOWARDS PRESBYTERIAN CREED REVISION

THE action of the Presbyterian General Assembly, at Philadelphia, on May 27th, touching the revision of the creed, was a preliminary victory, but a victory so far as it went, for the revisionists. Although no revision was made or ordered, the Assembly voted down a motion to dismiss the subject, and positive action was taken looking towards revision.

After a debate of four days, of great earnestness and of great courtesy, in which the voice of mediævalism was heard along with the voice of the most modern liberal thought, it was unanimously voted to appoint a committee which shall prepare and submit to the next General Assembly a brief statement of faith, "expressed, as far as possible, in untechnical terms, . . . to give information and a better understanding of our doctrinal beliefs, and not with a view to its becoming a substitute for or an alternative of our confession of faith." While this seems equivalent to preparing a revision that shall not revise, it is a substantial victory for the liberal party; or, to be more exact, it is a decision that enables them to continue their contention, with this important point in their favor—that they will in the next General Assembly have definite propositions to discuss.

At the same time the General Assembly of the Southern Presbyterian Church, in session at Little Rock, Ark., refused to take any action looking towards any possible change in creed.

THE STEADY LIBERALIZATION OF CREEDS

THE general discussion of creeds has provoked the publication of many interesting personal examples of the twofold nature of the modern theologian—this, for instance:

A preacher of most rigid orthodoxy had two sons, both upright men. One, who had never made a confession of faith, was drowned. The other son asked his father point-blank if he himself expected to be saved. "Yes." "Do you expect me to be saved?" "Yes." "Do you expect my brother who was drowned to be damned?" The cruelty of the question was smothered i
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have all moved far enough towards what may in a general way be called liberality of creed to leave the believers in the faith-cure behind.

And that the Protestant churches move slowly is proved by the rapid and powerful growth of such an organization as the Young Men's Christian Association—an organization that has most things in common with the churches except insistence on a body of doctrine.

It is by such large measurements as these—measurements which show a glacial motion—that two great facts become clear—the Christian churches are the most stable conservators of old thought; but, in spite of their conservatism, there is a steady movement towards liberality. They continue to hold, with a bond strong or loose, the great mass of the best people; and the mass of the best people show a tendency less to break away from them than gently to pull them ever gradually forward in thought.

THE CREED OF GOOD CONDUCT

ONE strong reason why many persons still hold to the churches, although they have discarded much of their creeds, is the wretched conduct of some who ostentatiously throw their old creeds off.

When a "Professor of Applied Christianity" cowardly forsakes the wife of his youth and leaves his children, and unconventionally marries a disciple of his loose-jointed social philosophy, from whose family he has long secured his maintenance, well-balanced men and women, whatever their faith may be, find something more than a creed in the churches. They prefer an orderly social life with an implied acceptance of out-worn doctrines to an irresponsible social order, even if its creed were to their liking.

Creed, in fact, plays an ever-lessening part in the life of the American people, and conduct plays an ever-increasing part. Their religion, whatever the theologians may say, is a religion of conduct, which, instead of being three-fourths of life, as Matthew Arnold measured it, has come to be nine-tenths of the life of the masses of good people in the United States.

But with the waning of faith and with the increasing emphasis on conduct, has come an ever-growing toleration of one another's opinions. Toleration is, indeed, the crowning distinction of a non-theological era, toleration of any sane opinion and even of many insane ones, but not of conduct that denies the primary obligations or disorganizes an orderly social life. Impossible as it is to arouse any interest in a discussion of infant baptism, for instance, public opinion wholesomely inflicts its severest punishment on a man who deserts his own children, whether his creed be orthodox or be some wretched patchwork of "social reform" and irresponsible "love."

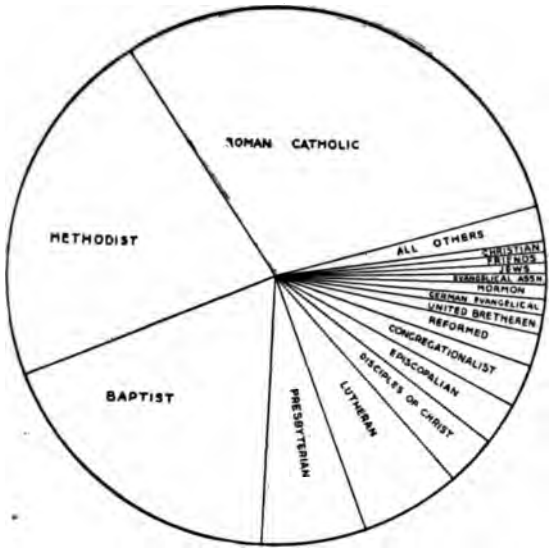
OPEN MARKETS AND OPEN MINDS

OUR own trade necessities as well as the jealous attitude of other nations are properly and naturally bringing a rapid change of thought about high protective duties. Mr. Babcock, of Wisconsin, who is the chairman of the Republican Congressional Campaign Committee, it will be recalled, introduced a bill into the last Congress to remove all duties whereby any "trust" could profit; and the discussion that he provoked showed an unexpected change of opinion among former high-protectionists. President McKinley's speeches in the Southwest also will be recalled, wherein he spoke earnestly for open markets. A reported conversation has been much discussed, wherein the President is quoted as having said: "I have in the last few years greatly modified my views on this subject [protection]. We have advanced a great deal in the United States . . . so that now we are in a position to trade with foreign countries on a reciprocal basis."

Following these expressions came the frank and strong speeches made at the meeting of the National Association of Manufacturers at Detroit, during the first week in June, in favor of reciprocal trade-treaties, especially the address of the president of the Association, Mr. Search, of Philadelphia. In a word, we are manufacturing so many more things than we can consume that "markets are better than maxims."

Meantime all this body of changing opinion ought to be concentrated on the Senate of the United States; for the Senate buried a large batch of reciprocal trade-treaties to which the State Department had given much work. Such a treaty with France is still pending. It is the old story of the Senate lagging far behind events and public opinion; for the time of high protection of full-grown industries passed on the day when foreign markets became as obviously necessary to our activity as the home-market.

THE RELATIVE STRENGTH OF RELIGIOUS SECTS



A CIRCLE SHOWING THE RELATIVE NUMERICAL STRENGTH OF THE RELIGIOUS SECTS IN THE UNITED STATES

THE LARGER CHINESE PROBLEM

THE Chinese problem consists of the two tasks that were very clearly outlined by our State Department at the beginning of the trouble last year—(1) to preserve the integrity of the great empire, so that the Chinese may work out their own salvation naturally and by their own institutions; and (2) to have an open door for trade, both because of the benefits that commerce, as free as possible, may confer on China and for fair dealing among the commercial nations.

These two great purposes include all others. The influence of trade and of free and friendly communication would carry with it all the other influences that Western civilization can properly exert there. All desirable and practicable political and social influences would follow in due time. The integrity of the empire has so far been maintained (except the appropriation of Manchuria by Russia), but trade regulations are yet to be specifically determined.

But the fundamental difficulty is deeper than it at first appeared to be. Whether the present dynasty, when it returns to Pekin, can hold the empire together; whether the payments of the colossal indemnity can be made and partition prevented; whether the anti-foreign spirit which showed itself widely in the Boxer riots may not continue in other ways to prevent the
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Still more important is the work to be done in connection with the great domain embraced in the National Forest Reserves, the total area of which is considerably greater than that of the states of New York, New Jersey, Massachusetts and Connecticut. Mr. Pinchot has written in the present number of THE WORLD'S WORK about these Reserves and their economic importance.

A REVOLUTION IN ELECTRICAL TRACTION

MR. EDISON has for some time given himself to the task of making a storage battery that should get over the difficulties of the battery now in use on automobiles for instance—in other words to construct a battery that shall be durable, economical, and light in weight; and the success that he has achieved is interpreted by electrical engineers as making possible a revolution in traction. The limitations of the present storage battery are said to be so far removed in the new one that we may expect in due time its general application to the propulsion not only of vehicles for pleasure but of heavy trucks, of tug-boats, of street cars, and the possible application of electricity also to agricultural uses—say, for instance, to the plow.

How near we are to these revolutionary applications of electricity, further experience on the road, in the water and in the field must be awaited; but Mr. Edison has already organized a company for the manufacture of his batteries.

The transmission of electrical power over considerable distances is fast bringing electricity into a new era of usefulness and making waterfalls valuable even in hitherto inaccessible places. The removal of most of the practical difficulties of storage batteries is all that is lacking to make it possible to apply electricity to almost any task that requires power.

MAKING GOOD TENEMENTS PAY

THE most wretched sight in all the civilized world is the plight of human creatures in bad tenements of big cities. No man or woman with normal emotions has ever seen it without having moods of willingness to give one's life-work freely, if, by giving it, a permanent change could be made. The righteous impulse is the impulse to pull them down; and this plan is carried out in some of the great pest-holes of the world.

But even then the task remains to construct wholesome tenements and to keep them wholesome; and the question that meets such a plan at the outset is: Will good tenements pay? The wretched ones usually pay handsomely. If good ones will not pay, a large population can be properly cared for only by municipal or private charity; and some model tenements have failed.

It is a demonstration of the utmost value, then, and of world-wide importance that the City and Suburban Homes Company in New York has made, under the management of Dr. E. R. L. Gould. The company has more than $2,000,000 invested in such property, and it earned four per cent. during the past fiscal year, after paying for management and allowing for depreciation; and the company will invest $1,000,000 more in sanitary and well-arranged and well-lighted New York tenements this year. This is as satisfactory a business philanthropy as has been developed by this generation, which has given so much thought to help that pays and can, therefore, be made permanent.

COMMERCIALISM AND ACADEMIC FREEDOM

PRESIDENT W. DEWITT HYDE, of Bowdoin College, Maine, in a Commencement address at Boston University, in June, spoke of dangers to free academic thought, among them the danger, as he regarded it, of the restriction to free economic thought imposed by the acceptance of large gifts and endowments from men of great wealth who are yet active in practical affairs. A great merchant or manufacturer endows a college. He has large commercial or industrial interests, which (let us suppose) profit by a high protective tariff, or by a combination of financial interests such as some political economists may regard as hurtful to society. The college accepts the endowment. The professor of political economy (let us assume) feels conscience-bound to inform the youth under his training of the very economic wickedness that the benefactor of the college profits by. One of two results follows—the teacher must remain silent or the endower must be offended.

Here, of course, is a cause of embarrassment. And every right-thinking man will stand firmly for academic freedom of thought. An institution that lacks it is not free; and if its freedom must be seriously or permanently

impaired, it were better that it should not exist in this age of the world and in our country. But is not this danger theoretical rather than real? President Hyde's address was suggested, no doubt, by the trouble at Leland Stanford University which has deeply stirred the whole academic world. But a candid review of the great benefactions to education which have been made in recent years by men of affairs will show conclusively that they have been given with a freedom from restrictions, open or implied, that is new in the world. The benefactors themselves are much more likely to suffer embarrassment from fear of being misunderstood in their motives than the beneficiary institution.

Compare the unrestricted gifts of rich men in our own land to-day with the hampering and narrowing theological restrictions, that not long ago accompanied ecclesiastical support of education, and such a comparison will give a good measure of the long distance that we have travelled towards liberality; and it is a very long distance. Moreover, the old ecclesiastical restrictions lasted from generation to generation; and any embarrassment because of a clash of economic doctrine now can last no longer than the life of one man.

THE SOCIAL ENGINEER

ABOUT two years ago the Chamber of Commerce, of Cleveland, Ohio, employed a "social engineer," whose business it became to study the betterment of working conditions in factories and stores, and to offer his service and suggestions to employers. As a result changes, small or great, have been made in more than 100 establishments in Cleveland. The success of the experiment promises to make the career of the social engineer a permanent one in many places.

For instance, a large mercantile establishment in Boston, most of whose employees are women and girls, has engaged a woman as social engineer. She was selected by the employees themselves. The policy is to leave the discipline and the social management in the hands of the employees and of the engineer. By popular vote they make their own rules and decide many important questions. For example, the working hours formerly were from 8:30 to 5:30. A competing establishment was kept open until 6. The employees themselves raised the question whether it were not better to remain a half-hour later. They decided to come half an hour later in the morning, when business was "slack," and to stay till 6. The question was settled without the feeling of ill-will that a direct order from the owner of the establishment would have caused.

Although difficulties arise that the employer must settle, the social engineer and a system of organized self-government relieve him of the need of exercising a kind of authority that makes the atmosphere of the establishment critical. Moreover, he has his time to himself for the direction of the business.

The work of the social engineer in the establishment has broadened with experience. A library has been established, and any employee may draw books on the payment of three cents a week. Membership in the Relief Club, which pays $5 a week for four weeks in case of illness, costs five cents a week. The girls now meet regularly by arrangement with the manager of one of the gymnasiums in the city for instruction in calisthenics; and there are fewer absences from ill-health. Cash prizes are given for suggestions to increase sales or to decrease expenses. Lately a bank has been established, paying four per cent. on all deposits. All these plans are under the direct personal charge of the social engineer. The employer has nothing to do with them. As he said recently, "I don't even hire my own employees. I can give my time to the conduct of the business."

But the success of this experiment is due primarily to the employer's continued personal interest in the well-being of the employees. A social engineer can never take the place of this personal touch. His business, in fact, is to find ways to make it effective. A generation ago many employers worked with their men. They knew them and associated with them in their work on equal footing. To-day conditions have changed, and such association is often impossible. But the need of it remains. The employer and the worker must be kept in close and friendly relation. So to keep them is the function of the social engineer. Whether applied to individual industries, or, as in Cleveland, to the industries of a large city, the possible good influence of such an officer upon our working life can hardly be overestimated. The very recognition of such a function is a long step forward.

A BUSINESSLIKE EXECUTIVE

WHAT GOVERNOR ODELL OF NEW YORK HAS DONE IN HALF A YEAR TO REDUCE THE ADMINISTRATION OF A GREAT STATE TO A BUSINESS BASIS

THE administration of a state government is for the most part, in the large sense of the term, a business matter. The executive stands in the relation of a superintendent or general manager, and the qualities which secure economy and efficiency in a large private enterprise are essential in the direction of great public interests.

In Benjamin B. Odell, Jr., New York has a business governor. While he has taken a keen interest in public affairs since early manhood and has become prominent in party management, he has never been a "professional politician"—that is, a man who makes his living out of politics, and who has no other means of support. On the contrary, Mr. Odell is, first of all, a business man, and a successful one. "Business," he frankly says, "is my forte; politics has been my diversion, rather than my occupation."

When Mr. Odell was elected governor last November, he began overhauling the affairs of the state in much the same way that a man would go to work who had been chosen manager of some company doing a large and complicated business. He found that wasteful and extravagant methods prevailed; that the members of the Legislature employed a far larger force than was necessary; that state commissions had been multiplied, until in more than one case the work of two or three overlapped; that these commissions incurred large bills for special counsel, although the State maintains a legal department to furnish advice in such cases; that the collection of the collateral inheritance tax cost ten per cent. of the amount turned into the treasury, when half as much should be ample; that the fee system of paying county officials had been retained until in Kings County the income in some cases has reached $100,000 a year; that the cost of state printing had increased within twenty years from only $108,435 to $583,191—and so on.

Having learned all this, Governor Odell told the results of his investigations to the Legislature, and pointed out how the reforms which were demanded could best be achieved. He showed that the Board of Mediation and Arbitration, the Bureau of Labor Statistics and the State Factory Inspector's Department—three separate institutions—could be consolidated into one, saving nearly half of the former cost; that the Forest Preserve Board and the Forestry, Fish and Game Commission duplicated each other's work to a great extent, and ought to be brought together at another large saving. He urged the abolition of the fee system in the cases where it fostered great abuses. He condemned the "supplementary list" device, by which the law-makers swelled their expenditures for employees far beyond all reason, and he recommended the substitution of a system by which the number and cost should be fixed. He served notice that it was the duty of the legislators to "curtail in every way the wasteful extravagance" of the public printing. In short, he not only exposed abuses, but he showed exactly how to bring about reform in every case.

Governor Odell's message startled the state. He had been generally known only as the clever lieutenant of Senator Platt in the management of the Republican organization; he was now shown to be a man of clear grasp and great force, who had set for himself the definite task of giving New York a more economical and efficient government than it had known in recent times. The question which everybody of course asked was whether he could live up to his own platform. It was certain that there would be opposition, and it was expected that it might prove formidable. Could the Governor persuade his party associates in the legislature that the policy which he advocated would be "good politics?"

The question of the Executive's power was soon settled. Bill after bill was introduced to carry out the specific reforms which he had advocated, and before long the Legislature began to pass these bills. When it hesitated

until there seemed risk of nothing being done, as in the case of the printing abuses, he sent in a special message on the subject. The result was that all of the great measures of retrenchment which he had urged at the beginning of the session were enacted into laws by its end, except the abolition of the State Board of Charities and the changes recommended in the work of the Lunacy Commission; and in each of these cases the Governor became convinced that his first impressions were wrong and ought to be abandoned. The money-saving in the expenses of state administration thus effected reaches into the hundreds of thousands.

The new governor had ideas as to better ways of raising taxes, as well as of expending them. He recommended laws taxing trust companies on their capital, surplus and undivided profits, savings banks on the par value of their surplus investments, and insurance companies on the gross amount of premiums received on business done in the state. Such laws were passed, and it is estimated that they will increase the revenues of the state by nearly two and a half million dollars a year.

New York is the greatest business state of the Union, but its laws regarding the incorporation of companies have been so onerous that a large proportion of the great corporations established in recent years were chartered in other states. Severe and unjust penalties for unintentional negligence about making annual reports of corporations and for other innocent failures in matters of detail also put companies at a disadvantage in this state. The impolicy and unreasonableness of all this naturally impressed a business governor, and Mr. Odell recommended changes in the law which the Legislature made, and which appear to safeguard the public interests without making the unjust discrimination against New York companies which has heretofore existed.

Mr. Odell applied business principles to the political problems of legislation which confronted him. The organization of his party, under the leadership of Senator Platt, was committed to the policy of attempting state regulation of the police force in New York City. No proposition could be more abhorrent to a business man than the plan of taking a great municipal department from the control of the people and turning it over to the state government at Albany. Governor Odell arrayed himself against this scheme in his message, on the ground that it wa
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A "TRUST" FOR SOCIAL BETTERMENT

THE FOUNDING OF A PROPERTY FOR IMPROVING THE SURROUNDINGS AND WORKING CONDITIONS OF EMPLOYEES—AN EXPERIMENT IN CAPITALIZED SOCIAL IMPROVEMENT—THE PLAN AND PURPOSE OF THE FOUNDER

BY

DR. W. H. TOLMAN

DIRECTOR INDUSTRIAL BETTERMENT DEPARTMENT OF THE LEAGUE FOR SOCIAL SERVICE

THE village community built up by Mr. Richard Cadbury and Mr. George Cadbury, at Bournville, near Birmingham, England, consists of 400 acres, and contains many cottages for the employees, now numbering nearly 2,000. The lowest rental of these cottages is $1.50 a week, for which the tenant gets three bedrooms, a kitchen, a parlor, and a third room downstairs, and a bath. The houses are in the best sanitary condition, and a large garden goes with each house. The village is laid out very attractively with its winding streets, its trees and its open spaces. There is a large recreation ground, swimming pools, a dining-room for the girls, a boys' club, light and well-ventilated workrooms. A block of beautiful cottages forming a quadrangle, beautifully kept up with turf and flowers has been set aside for homes of the old or semi-dependent. They are called "Houses of Rest." Each home consists of three rooms and may be occupied by any old lady who can pay, either herself or through relatives, five pence a week. There is also a convalescent home. Every summer thousands of children from the tenements of Birmingham are turned loose on the farms and meadows, for a day's fresh air and pure food. The slum workers of the Salvation Army in London also who are worn out with their labors are entertained during the summer in one of the houses set aside for their use.

For centuries the ancestors of the Cadburys have been identified with the west of England. Mr. Cadbury's grandfather was for nearly 30 years the Chairman of the Town Council of Birmingham, a position corresponding to that of mayor. The father also held offices of public trust. Mr. George Cadbury has been a member of the Birmingham County Council, especially interesting himself in the Health Committee. A trifle more than 40 years ago he became a member of the firm, then employing a staff of twelve. The business—of the preparation of chocolate—was not yielding a profit. Mr. Cadbury himself worked from seven in the morning till nine and ten at night. He believed in the personal touch of the employer, holding that he should personally see to it that justice is done his employees. I asked if there had been any strikes at the factory.

"Oh, no," said Mr. Cadbury, "we all live among our people, we go in and out with them, and we are all friends. They do not look upon us as masters, nor do we consider them our dependents."

In the dining room of the factory there is a marble bust of the founder, with this inscription:

RICHARD CADBURY
WHO DIED AT JERUSALEM, MARCH 22, 1899.
THIS BUST WAS SUBSCRIBED FOR
BY THE EMPLOYEES OF
CADBURY BROTHERS AT HOME AND ABROAD
IN LOVING REMEMBRANCE OF A KIND AND
CONSIDERATE EMPLOYER.

Such a tribute is more eloquent than any obituary notice or funeral oration.

In this factory are nearly 2,000 girls and women, who may buy at cost a warm midday meal well cooked. A man is employed to buy the best fruit in the market at wholesale to get the best prices. The fruit is then sold to the employees at cost. A simple form of entertainment is an open air swimming pool for men, large enough for a good swim.

So far all this is interesting as an unusually excellent example of good social life for a working community. But the significance of it is that it has led to and is a part of a unique plan for social betterment—a great Social

A TYPICAL COTTAGE AND GARDEN

Trust, which is a new institution, and a new kind of benefaction, planned and managed in a most business-like way, for Mr. Cadbury founded last year what he called the "Bournville Village Trust." In explaining to me the organization, he said, "At present it is in my hands and the hands of my family, but after my death, the trustees may elect a part of their own successors, and three trustees shall be appointed, one by the Society of Friends, one by the City Council of Birmingham, and one by the District Council of Kings, Norton and Northfield. Women are not disqualified, but no more than three may be members at any one time."

Mr. Cadbury has given to the Trust 330 acres, on which 370 cottages are already built. 143 of these have been sold at cost on leases of 999 years, and the remaining 227 are rented by the week, the rentals being paid into the Trust. The total rent roll is $26,230 a year, and a fair valuation of the gift is $900,000.

"For some time I had the intention of making this Trust, and I consulted with those whose judgment I valued most, in order that the scope of the movement might be as far-reaching as possible. John Burns was one of my valued advisers."

"Will the powers of your gift be confined to Birmingham?" I asked.

"No," he said, "the revenue of the Trust may be applied toward the erection or remodelling of buildings and the acquisition of land in any part of Great Britain, and we can arrange with any kind of a transportation company for cheap transit. I strongly desire that the dwellings shall occupy one-quarter of the site, the rest to be used for gardens and open spaces, and I want the rent to be so low as to attract the laborers from the slums, but not in any way to place the tenants as recipients of charity."

Any part of the Trust may be used for a factory, but the suggestion is made that not more than one-fifteenth of the total area shall be so built upon. Lodging houses may be built, and whatever concerns the improvement of the families, like lighting, transit and water, may be supplied. Subscriptions may be made to hospitals, providing the amount does not exceed one per cent. of the annual net rental.

OPEN-AIR SWIMMING POOL

Near the factory. The women of the factory have a covered pool

Money may be borrowed on the security of the Trust and land may be given for houses of worship, hospitals, schools, technical schools, institutes, museums, gymnasia, baths, laundries, clubs and recreation. Lecture courses may be supported for any educational purpose that tends in the opinion of the trustees to "the health, mental, moral and physical welfare of the tenants and their families." Provision is made for any kind of coöperation with public and private bodies.

"If there is any one point I have thought about in every possible way, it is this," said Mr. Cadbury, when I inquired if he would have the Trust operated in accordance with his own belief and also, what might be the political workings of the scheme. "I have made the Trust wholly unsectarian and non-political. There shall always be a rigid exclusion of all influences calculated or tending to impart a character sectarian, as regards religion or belief, or exclusive, as regards politics, and it will be a violation of my intention if participation in its benefits shall be based on the grounds of religious belief or political bias."

I was surprised to find the liberal views entertained towards the liquor traffic, knowing Mr. Cadbury's own convictions on this subject and his constant efforts toward the reclamation of men who are the victims of its abuse.

"At first I determined to suppress it altogether, but the impossibility of that was proved to me, and I then decided on certain restrictions. None of the buildings shall be used for the manufacture, sale, or coöperative distribution of any intoxicating liquors, except by unanimous consent of the trustees. If we decide to grant any privileges, we may impose any conditions we see fit, with this distinct proviso, that any net profits shall be spent on the enlargement of the recreative features of the village and other counter attractions to the usual conduct of the liquor trade. I hope that the trustees will ever be mindful of my wish that the liquor traffic shall be absolutely sup-

THE MEN'S ENTRANCE TO THE FACTORY

Vines and flowers cover the bare brick walls

pressed, unless such suppression lead to greater evils."

The origin of this famous Trust may be said to have dated back nearly 40 years ago, when Mr. Cadbury and his brother began their labors among the wage-earners in Birmingham. It was my privilege to breakfast with his son, who is now one of the teachers, and 40 of his colleagues, at 7.30 one Sunday morning, in preparation for the Sunday-school at 8.30, when hundreds of men and boys assemble for spiritual help and mental education. These are the men who owe so much to the Cadburys.

"In trying to help these men, who were hard at work all day, I very quickly discovered, that when night came, the only thing offered them was the saloon, as you call it, our public house or 'pub.' In some way I must get these men back to the land, and that is why I locate six of my cottages on an acre, planting fruit trees at the bottom of each garden. We all know the increased yield of land cultivated on the intensive plan. I am sure that the employé when at work on the land is away from the public house."

"Can others than your own people live in your village?" I asked.

THE WOMEN'S ENTRANCE TO THE FACTORY

SPENDING THE NOON HOUR

A beautiful lawn makes a small park used by the women and girl employés. There is a summer-house here where luncheon may be eaten

THE RECREATION GROUND

These grounds were made a trust to the village several years ago, so that the field can never be used for other purposes than recreation

"Why certainly, there are many men working in Birmingham who cycle home to the pure fresh air of their home in the country, eat the fresh vegetables cultivated by their wives and children, sometimes doing a bit of the garden work themselves. Under such conditions the saloon loses much of its attractive power.

"Let us suppose the time has come when the Trust has enough of a credit balance to acquire say an estate of 300 acres. As I told you, I would set aside one-fifteenth for factory purposes, locating say 20 in the centre of the tract, one-tenth of the rest of the land should be set aside for open spaces and the rest to cottages, six to the acre. Then, as now, the workman would be near his work, but what a difference—the city slum has made way for the Elysian field of the country, the saloon has given place to the attractions of the home. The strength of England lies in her laborers, but if they work all day and spend their nights in the public houses, the result will be pretty poor."

The establishment of this Trust is of vital importance, not only to the wage-earners in and about the Cadbury works, but to the entire country, for land may be bought and buildings erected in any part of Great Britain. As an experiment in housing alone, it will be watched with keen interest, for if Mr. Cadbury alone can do all this, it will be possible for public bodies like town and city councils to do likewise, and the solution of the problem of improved housing will have made a decided advance.

From a careful study of various movements for industrial betterment, this one seems to me to be the most comprehensive; it is stable because built upon the confidence and the loyalty of the staff, who have seen the Cadburys go in and out among them for more than 40 years, during which time they have weighed every act, and they believe thoroughly in everything that is done. The movement has grown slowly, so that it now stands not as an experiment station, but an "application station."

NASSAU GROUPER

Though not so brilliant in color as the Rock Hind, this fish, through its markings, is one of the show fish of the place. It attains a weight of over forty pounds and is a good food-fish

PHOTOGRAPHING TROPICAL FISHES

THE MANY-COLORED VARIETIES CAUGHT AT KEY WEST, FLORIDA — "A NET FULL OF SILVER AND GOLD AND PRECIOUS STONES FLASHING IN THE SUNLIGHT" — HOW PHOTOGRAPHS FROM LIFE ARE TAKEN OF THESE COLORED SPECIES — A NEW DEPARTURE IN THE USE OF THE CAMERA

BY

A. RADCLYFFE DUGMORE

PHOTOGRAPHICALLY ILLUSTRATED BY THE AUTHOR

THE fishermen of the North Atlantic coast battle with the fogs and gales of the ocean. During the winter snow storms rage and the rigging of the vessels freezes into bars of ice. Add to these perils the huge ocean steamships which crash through the fog or the darkness, regardless of the tiny fishing craft, and surely the prospect offers scanty inducement to the man who must earn his bread on the sea.

In direct contrast to this are the conditions under which the fishermen of Key West work. There, beneath an almost unvarying blue sky, and in waters whose glorious colors are a constant delight to the eye, the life of the fisherman knows no greater hardship than an occasional "norther" during the winter. Amidst such surroundings these toilers of the sea make a far more comfortable living than the sturdy Gloucester men who run such frightful risks.

It may surprise some to hear that Florida stands tenth as a fish producing state. With the increased shipping facilities, there is every reason to believe that it will soon stand still higher. It has a coast line (including islands) of 3,500 miles. The annual catch is about 36,000,000 pounds with a total value to the fishermen of about $760,000. Not only salt water but fresh water fish are caught in

PORTUGUESE MAN-OF-WAR

Also called Turtlefood—under full sail, and with tentacles lowered. These tentacles can be hauled up at will

immense numbers and sent north. From Lake Okeechobee, the Kissimmee river and the numerous lakes at the head of the river, catfish are shipped in in credible quantities. Sev eral steamers are occupied in carrying them, packed in ice, to Kissimmee, where, after being repacked, they are sent north. The fishermen receive no less than 9 cts. per pound for these fish skinned and cleaned. Large mouthed black bass, or "trout," as they are called in Florida, are also exported to some extent.

Roughly speaking, there are about 60 species of fresh water fish. The salt water species reach the extraordinary number of over 500. About 250 are found in Key West and of these nearly 100 are reckoned in the list of food-fishes. To realize fully what this means it is interesting to know that the South Atlantic States boast of only 55 species; the New England States of only 48; and the Pacific States of only 40. So that Florida has a greater variety of fish than any other part of the country, and it is at Key West that the greatest number of species is found.

The whole system of handling fish at Key West is peculiar to the place. To begin, the

ROCK HIND

This is one of the most handsome fishes of Key West. It is common and ranks high as a food-fish. It is one of the Grouper family and reaches a maximum weight of about sixteen pounds

fish are divided into two large classes: those that can be brought in alive and those that cannot. Of the latter the most important are the bonito, the king fish and the Spanish mackerel. The fishermen say that these fish have soft heads and that as soon as they are

YELLOW-TAIL

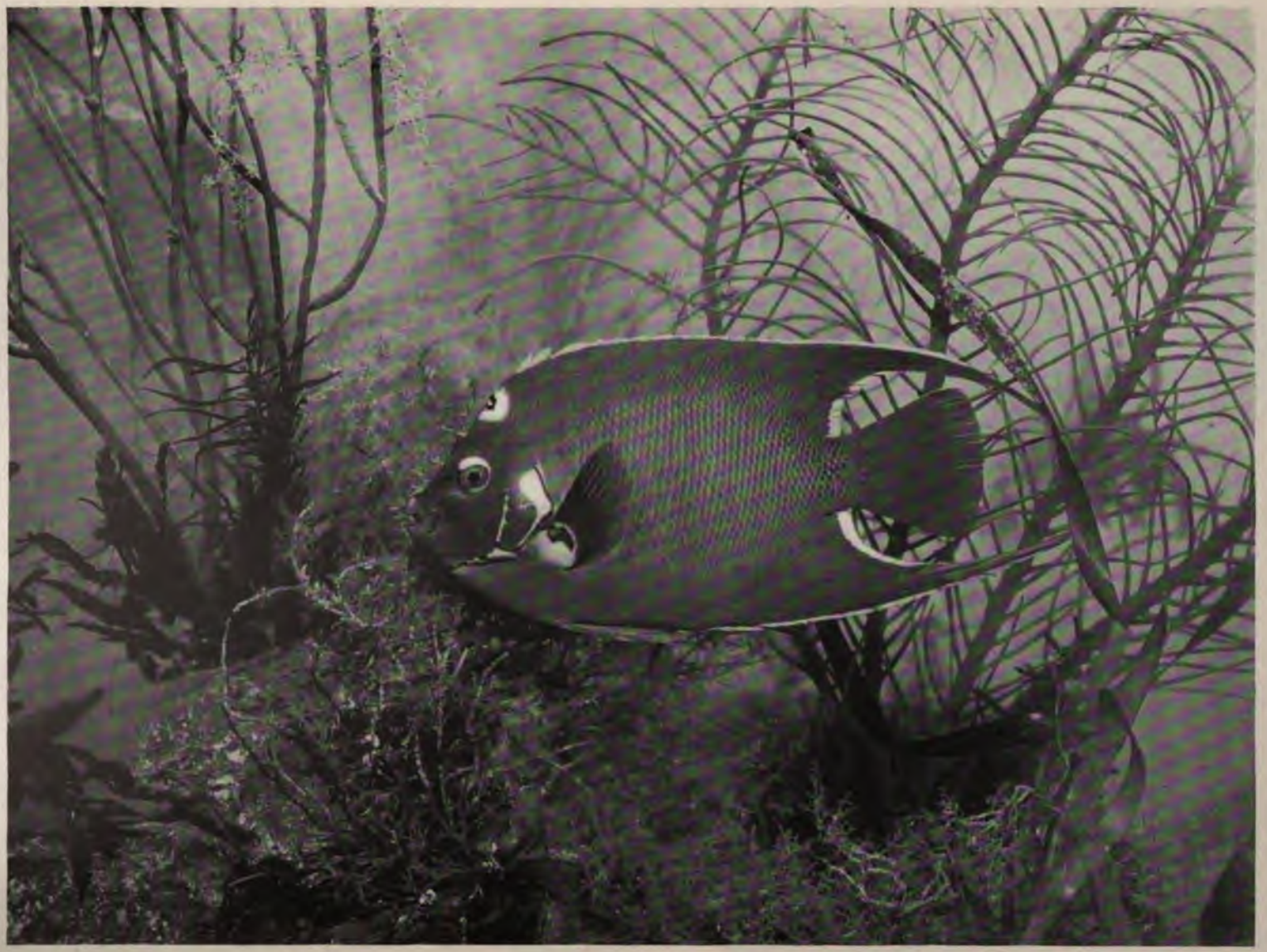
One of the most abundant of the smaller fishes, over 64,000 pounds being caught about Key West during the year

PUDDING WIFE

An extremely beautiful bright-green fish not reckoned among the food-fishes on account of its toughness

PARROT FISH

So-called because the mouth resembles the beak of a parrot. Not a good food-fish



YELLOW ANGEL FISH

Also called by the fishermen the Queen Angel on account of the circle on the head. This is one of the most beautiful of the tropical fishes, its general color being bright-yellow and blue

caught they strike their head against the side of the boat and are instantly killed. How much truth there is in the statement I cannot say. But the king fish certainly die very soon after being captured, and the men tell, as a remarkable fact, of a single mackerel that lived more than an hour after being caught. Nearly all the other fishes are brought to the market alive. Each boat is fitted with a well into which the water is admitted through numerous large holes. Into these wells the fishes are put immediately after being caught, and so thickly are they crowded together when the catch is a good one, that many die of suffocation. And even when not crowded, if the weather is rough a large number are killed by the motion of the boat.

About dawn the boats begin to leave the dock for the day's fishing. Some of the lazier men never get off until after seven, but they do not make money. Most of them go to what is known as the north channel and fish on the bars and shoals. Hand lines are used. The bait for bottom fish is crawfish, conch or small fish known as "sardines" or "pilchards." The crawfish which look much like lobsters without claws, weigh on an average about one pound; they are easily caught on a day when the water is clear, and are very abundant.

One man often brings in as many as 200 as the result of a day's work. At the market they fetch 5 cents each, either for bait or for food.

If the day is fair the boats begin to return about two in the afternoon, and from then till dark. On arriving at the wharf the fishes are usually transferred to cars: large boxes perforated and fastened, by means of ropes, to the wharf. Small scoop nets are used to effect the transfer and the wriggling, glittering mass of wonderfully colored fishes is ladled out—a most remarkable sight. It looks like a net full of silver, gold and precious stones as it flashes in the sunlight. No words are too extravagant to describe it. No description can convey any adequate idea of the brilliancy and diversity of the hues That such exquisite examples of nature's handiwork should be killed and used for food seems scarcely right, yet few people ever think of a fish except as

LITTLE HEAD PORGY
Shows full markings

RED GROUPER
One of the most common and important of the food-fishes of this place. The usual size of those brought to market is about ten pounds, though some are caught weighing as much as twenty-five pounds

LITTLE HEAD PORGY
Shows the light color with bars slightly noticeable. The color comes and goes apparently at the will of the fish and is one of the great difficulties encountered by the live-fish photographer

CONEY

An exquisitely-colored fish, being of a rich reddish-gray, thickly covered with red and brown spots. Of some importance as a food-fish, though it is usually quite small, seldom reaching a length of over ten inches

something to be killed and then eaten or not, according as its flesh is delicate of flavor and texture.

Once in the "live" car the fishes are either sold outright to dealers who in turn retail them, or they are disposed of at retail by the fishermen themselves. The house-

SQUIRREL FISH

The name is derived from the remarkable size of the eye. The general color of the body is bright rosy red. This is not a good food-fish, and is one of those that have to be handled with care as it is well armed with sharp-pointed fins that are said to inflict dangerous wounds

YELLOW-FIN GROUPER

This is one of the fairly common food-fishes resident at Key West. It reaches a weight of twenty pounds. It does not appear to have the power of losing its spots, but its color changes to such an extent that at times the fish shows pale buff or nearly white with moderately dark spots, at other times the ground color is almost green on the body, while the head is quite green. The dark spots on the head have scarlet centres, on the body they are plain dark greenish-brown, on the under parts scarlet with dark edges. The pectoral fin is partly golden-yellow, and gives the name to the fish

MOON FISH

This is perhaps the most remarkable of the Key West fishes. It resembles a sheet of mother-of-pearl both in color and texture. It is an excellent food-fish

WHITE OR COMMON GRUNT
By far the most important of the smaller food-fishes

keeper comes or sends a boy and he gets his ten cents worth of "grunts" or perhaps a twenty-five cent grouper, selecting what he wishes from among the live fishes. His purchase is immediately scooped out and killed—if a small fish by striking the side of the head with a round wooden club; or if a large one by driving a pointed iron spike directly into the brain. The method is a merciful one and the fish is dispatched with such dexterity that death is instantaneous. Then it is cleaned and scaled or skinned as the case may be, and almost before you realize what has happened, it is neatly strung on a strip of palm leaf and another customer is pointing out a particular fish that suits his fancy. Occasionally, to vary the monotony, a large jew-fish is brought in. These weigh several hundred pounds. Then it is that the "sons of rest," as the dock loafers are named, are called to give a hand to haul the monster on to the dock, where he is quickly killed, skinned and cut into steaks of no mean dimensions.

BLACK ANGEL FISH
This shows a young specimen. The white bands are wanting in the mature fish

All refuse is thrown into the water to be eaten by any of the marine scavengers, from crabs to sharks. Sharks, being the most useful of the scavengers, are seldom molested by the fishermen, and it is no uncommon thing to see one ten or twelve feet long hunt-

ing about in the shallow waters in search of refuse.

When it happens that a king fish boat arrives, and these often make a two or three days' trip in search of a school, the whole method changes. There is now no killing of fishes for they are already dead—and frequently cleaned for market by the time the boat reaches her moorings. They are brought into the market by a steady procession of men and boys carrying from two to four apiece. Every available hook and table in the market is called into use, for the catch of king fish is usually very large, 150 often being the result of one boat's work.

By this time the market is transformed from a low and dingy shed to a mass of silver and blue that shines and changes color at every step you take. All is activity for there is need of haste. Fishes spoil quickly in this hot climate. All that can be are sold fresh, and what remains is lightly salted and hung up to dry, or else is packed in ice and shipped to Cuba, which is the only mart for the surplus fishes of Key West. As high as 420,000 pounds of king fish have been taken at Key West in a year, the total value being $7,000.

AMBER JACK

A fish which reaches a weight of over eighty pounds.

Besides fishes, the different varieties of turtles form a large part of the marine industry of Key West. The aggregate weight of turtles taken in one year was 337,000 pounds, valued at $16,870. The value of tortoise shell (from the Hawksbill turtle) taken during the same year was $1,674. About 4,921,704 turtle eggs were taken. The turtle lays her eggs in the sand above high water mark, using her flippers to dig the hole and to scatter the sand over the eggs that they may be concealed. As many as 600 eggs are laid during the season by one turtle in three layings.

JOLT HEAD PORGY

Through the addition of vegetation the fishes' natural coloring and markings are seen. This is one of the very important cheap fishes of Key West, and is the largest of the Porgy family found there. The maximum weight of these fishes is about ten pounds

OLD WIFE

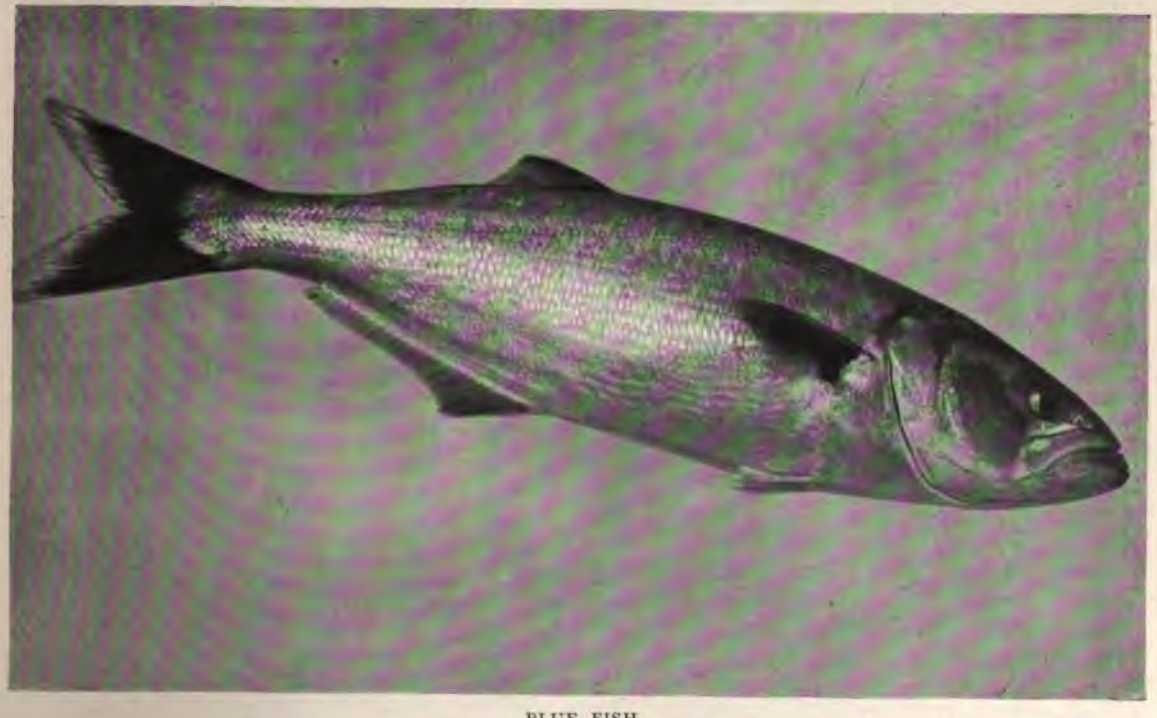
This is a near cousin of the famous Pompano. It is rare at Key West

GRASS PORGY
Shows the markings subdued

GRASS PORGY
Showing the markings at their best

While the animal is engaged in depositing her eggs she allows nothing to disturb her. "Striking her with a stick or jumping up and down on her back apparently produced no effect on her," said one observer.

The fishermen say that the turtles are particularly fond of the Portuguese man-of-war *(Physalia Arethusa)* as an article of food. These extraordinary creatures are found in great abundance near Key West. As they sail over the sparkling waters they present a beautiful sight. They look like a wonderful piece of Venetian glass, or a very blue elongated soap-bubble, with a pink or purple edge. Underneath hang an immense number of tentacles. These may be lowered or drawn up at will. They stretch to a length of many feet, and produce a violent irritation or poisoning whenever they come in contact with flesh. The turtles knowing this, close their eyes while feasting on them, and it is then that the turtle is easily caught as the tentacles cling tightly as they wrap themselves round the animal's head.



BLUE FISH
This fish though so common along the eastern states is rare in Key West waters

JOLT HEAD PORGY

Shows the fish lacking all marks, the color being of a silver-gray to correspond with the lack of background. This is the extreme of lightness in color

Of the many wonderful fishes from tropical waters that may be seen at any of the aquariums, so sparsely distributed throughout the country, there are few that attract more attention than the moon-fish. People in crowds stand and stare in amazement at its ghostly beauty. And small wonder; for surely it would be difficult to find anything in nature more remarkable. Yet in Key West one soon becomes accustomed to them. There it is no uncommon thing to see a seine catch of 700 or 800. As they lie in the bottom of the boat it seems as though the craft were surely lined with silver and mother-of-pearl so brilliant is the effect. In spite of their seeming transparency and lack of substance they are very solid, and are reckoned among the best of the food-fishes. So much seine-catching has been done lately that these fish have found by experience that there is danger in the shoal waters outside the docks, and so to some extent they have taken to living among the piles and beneath the wharves. There no net can be used, but with hand-lines and "sardines" these fish may be easily caught, once you know the trick. For their size they pull hard, yet they cannot be called game fish.

GRAY SNAPPER

This is the most abundant of the Snappers found at Key West. The usual weight is about five pounds, the maximum being eighteen pounds

In the way of game fishes the Spanish mackerel take a high place. They bite readily and put up a good fight. Though I have never tried it, I should imagine that with suitable rods and tackle good sport could be had. Those who care for hand-line fishing could have their most extravagant wishes gratified.

Of the smaller fishes the grunts and yellow-tails are most abundant. Of the larger fishes the most numerous are the many varieties of groupers (some of which reach a weight of

fifty pounds), mutton-fish and porgies. These are all "bottom-fish," that is, they live among the rocks and weeds, whose brilliant coloring accounts for the corresponding bright colors of the fish, for of course they are protectively colored and marked. It seems strange to think that the wonderful colors of the angel-fish can be a means of protection; yet it is so. Fishes living near the surface are mostly bluish, greenish or silver-colored. There is no need of brighter tints. Those that frequent rocky places have markings (usually spots) and colors to correspond with the rocks. Again those living among the brightly-colored weeds are protectively marked with every variety and combination of color.

In making the accompanying photographs the fishes were placed in an aquarium, specially constructed for the purpose. Isochromatic plates were used in every instance, thereby giving fairly true color values. The aquarium was lined with white cloth in order to reflect as much light as possible. When a fish such as a porgy was placed in it all the colors and markings instantly vanished, and instead of rich greens and purples, with more or less distinct bars, we had a plain, pale, silver-colored fish as shown in the photograph on page 940. A few pieces of rock were placed near the fish and some color reappeared; then weeds of various kinds were added and the color came back to the fish, not steadily however, but rather in fits and starts. The illustration on page 937 was taken when the fish's color was nearly at its best. All this applies not only to the porgy, but to many of the brightly-colored and strongly-marked scale-fishes. Needless to say, it caused me no end of difficulty in obtaining satisfactory photographs. The angel-fish are among the very few that changed but little, strange as it may appear, for they are the most brilliantly colored of any of the Key West fishes. The porgies of all kinds are very changeable. Some of the fishes, while they retain their markings to a certain degree, lose their colors almost entirely. This is especially true of the yellow-fin, grouper and the hinds. The spots do not disappear, but the ground color changes from a rich and fairly dark green to a pale, washed-out, dirty yellow that lacks all beauty.

It can be seen by these remarks how great may be the variation in photographs of the same individual fish. One picture may show a plain silver fish lacking all marks; another may show indications of bars or stripes and yet not give the small markings of the head; and still a third may show the fish strongly barred, with fine, yet distinct lines about the head and gills. This is one of the greatest difficulties to be met with in fish photography, for unless we know what the full coloring ought to be, we should be more than likely to make the exposure at a time when perhaps some of the most characteristic markings were entirely wanting.

In handling the fishes it requires a certain amount of care to avoid being cut by the fins, which in some species are to some extent poisonous. The Key West fisherman has an unbounded horror of being bitten by almost any kind of fish, as he fears blood poisoning will set in, although according to those who have studied the question, there seems to be very little foundation for this fear.

It is curious how the names of the fishes have gradually changed from what they originally were. One of the fishermen seeing me write down the name, saucer-eye porgy, ventured to correct me, saying that it should have been "sacer-rye." Turbut should have been "turbret," and instead of margate fish I ought to have written "margaret." In a few years we may expect to find many of the names so changed that the original name will have been completely lost sight of. As it is the number of misnomers is very great. We hear of "sardines," "pilchards," "whiting" at Key West, though in reality none of these fishes are found there.

Anyone entering this comparatively new field of camera work should be most careful in regard to the names of the fish. Otherwise, the photograph, no matter how good from a pictorial point of view, loses greatly in value from a scientific standpoint. Fishes are, at best, difficult of identification, so that, unless you are reasonably sure of their scientific name, it is best to use not only one, but *all* the names by which it is locally known. To avoid confusion it is a good plan to stick a label to the glass front of the aquarium. In this way the name is photographed with the fish.

NOTE.—All figures relating to quantity and value of fish, as well as some other information, are from the 1897 "Report on the Fish and Fisheries of the Coastal Waters of Florida," issued by the U. S. Commission of Fish and Fisheries.

OUR RELATIONS WITH CANADA

THE DOMINION'S EFFORT TOWARDS INDEPENDENCE OF TRADE WITH THE UNITED STATES — ENTICING IMMIGRANTS TO THE NORTHWEST PROVINCES — BUT OUR TRADE GROWS AND MERITS MORE CONSIDERATE ATTENTION

BY

J. D. WHELPLEY

THE people of Canada are watching with keen interest the commercial rivalry between the United States and Europe. Fourteen treaties of trade having been smothered in the United States Senate last winter the Canadians now believe that even had the High Joint American-Canadian Commission formulated an agreement it would not have been ratified.

Canada is our nearest and closest neighbor and the third largest customer we have in the world for the products of American labor. While the talk of new trade is chiefly of Europe, and we are straining our eyes in the effort to see what we can do across the oceans, we have expended little or no effort to bind closer to us the countries of the North American continent whose trade should be ours.

That the trade of the United States with Canada and Mexico has made great gains is no reason for neglecting the opportunity to make them still greater and to bind these countries closer to us than by the mere ties of necessity. The gain which has been made is despite our national indifference and not because of our willingness to please.

The return to Canada of the members of the High Joint Commission last year was followed by a marked change of attitude towards the United States on the part of the Liberals, now in power. These commissioners, among whom was Sir Wilfrid Laurier, himself the Prime Minister of the Dominion government, have reported not only that their mission was unavailing but that their efforts to draft a convention of reciprocity met with scant courtesy and even coldness. This was a bitter disappointment to the Liberals. As a party they have stood for better relations with the United States. The small contingent of annexationists are within their ranks. The one and a half million Canadians of French extraction or twenty-five per cent. of the population of the country are largely of the Liberal party, and these French people are strongly in favor of removing as far as possible any artificial barriers to trade or movement now encountered at the southern boundary. The Conservatives, the party of high protection and retaliatory legislation, are chuckling over the discomfiture of the Liberals. There could be only one result of this defeat of Liberal intention so long as human nature and expediency govern politicians. The Liberals, for effect at least, have now largely turned against the policy of making any further advances to the United States.

A new national policy or rather the revival of an old conception has arisen. To make Canada a great populous, prosperous and self-sufficient nation is now the political programme. This is to be accomplished by providing an all-Canadian deep-sea route of transportation, encouraging immigration to the utmost and subsidizing liberally anything which promises development of home industry. The attitude of this lusty nation of expanding powers towards the world at large and especially towards the United States is to be one of independence and indifference. Trade with other British colonies is to be encouraged. European countries are to be accorded commercial privileges by treaty in return for concessions on their part. By improving her transportation facilities Canada is not only to handle her own commerce but to secure a large part of the export trade of the northwestern United States. By encouraging immigration the Dominion with its present population of six millions is to have fifteen millions by 1910 and twenty-five millions by 1915. By means of subsidies and other forms of encouragement she is to produce and manufacture supplies of every description needed by her

people. In her strength and independence she is then to be wooed and treated with for commercial favors instead of remaining in an attitude of supplication.

Under the inspiration of this prospect Canadian statesmen have waxed eloquent. The debates in Parliament have been replete with declarations of commercial independence "from our neighbor to the south" and suggestions of retaliatory tariff legislation have flown thick and fast. In short the resentment resulting from the indifference of the United States has shown itself to be deep and outspoken. The all-absorbing Canadian topic of river, canal and lake transportation occupied the greater part of the legislative time at the last session of Parliament. It was during the debate upon this question and the inevitable wrangle over the river and harbor appropriation that hostile expressions were made. The strongest impression made upon an American who has enjoyed the privilege of listening to the Parliamentary proceedings is the enormous relative importance of the United States to Canada in the minds of the legislators of the latter country as compared with the position occupied by Canada in the Congressional proceedings at Washington. "Our great neighbor to the south," "our rivals across the river," "our energetic competitors across the lakes," are expressions which now drop constantly from the lips of Canadian speakers.

The Canadian dream of a self sufficient nation will pass. It is not regarded as substantial even by those who for political effect paint the horizon of the future in such glowing colors. It is a political "bluff," designed to divert the public mind from the soreness of defeat, to console the small brother for the snubs of his elder. In itself, however, it constitutes no good reason for the United States to continue its attitude of indifference.

It is recognized by transportation experts that the St. Lawrence route can never compete successfully with the American rail route to the Atlantic coast, no matter what improvements may be made in the river channel. Winter closes the Canadian rivers long before the lakes are closed. From Buffalo to New York the great bulk of staple freights can be handled at a profit for much less than the present rates, if necessary. The Canadian farmer can now secure from his American customer insurance against the fluctuations of the market during the twelve days of transport,

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States sold Canada forty-two per cent. of the latter's purchases; in 1897 fifty-five per cent., and in 1900 over sixty per cent. As only about thirty per cent. of Canada's produce comes into the United States free of duty and less than forty per cent. of the United States produce enters Canada in like manner, it is evident that the natural currents are too strong to be seriously deflected by trade misunderstandings or special privileges. It is also a promise, however, of what might be brought to pass by a thoroughly good understanding between the United States and Canada.

Sir Wilfrid Laurier, the shrewd and nimble-minded statesman who is the inspiration of the Liberal party, is theoretically a free-trader. He explains his endorsement of a protective policy on the ground that since the people of Canada demand it they should have it. He has no hope that he will live long enough to see Canada upon a free-trade basis though he believes the Canadians are dazzled by the growth and prosperity which have come to the United States under a system of protection, and that when the glamour has passed they will see things in the same light as he now sees them. He makes the prediction that if Canada would to-day adopt free-trade her immediate growth would be the wonder of the world, and that she would incidentally become a most uncomfortable neighbor for the protected country on her south.

Canada is now the only country in the world offering free land to home seekers of limited means. Fifty thousand immigrants are each year entering her ports and seventy-five per cent. of these people go at once to the northwest territories. Unsuccessful in their efforts to secure trade advantages in the United States for Canadians the Liberals have redoubled their efforts to secure Canadian immigrants from us. Twelve thousand home seekers crossed the line to the north last year and twenty thousand will go in 1901. Canadian agents are at work in many states, thousands of dollars are spent in advertising, every facility is offered those who desire a change of base, and the work has already resulted in a notable exodus. It is estimated that in years gone by over a million Canadians have come to the United States. The tide has now turned, for during the past four or five years the annual exodus from Canada to this country has not added five hundred people to our population. The northwestern states have furnished the greatest number of Canadian immigrants but during the past year twenty-nine American states sent people to the wheat lands of the Dominion.

Canada is now more nearly an independent nation politically than she has ever been. There has been some sentiment in favor of annexation to the United States but this has declined, especially since the failure of the United States to pay respectful attention to Canada's requests for trade concessions. Canada is thoroughly loyal to the British flag though it is a loyalty which seems to be more a sentiment than an actuality. The presence of a British governor-general causes the people some irritation at times and makes them restless, and the country would stand no draft for tribute to England except such as she would make voluntarily. Her people are resentful that England has seen fit to do nothing to help the colonies in trade or development. English emigration to Canada is not looked upon as very desirable. Scotch, Irish and Welsh are welcome, but the undersized, ill-fed and morally irresponsible emigrants who leave England's cities are not wanted by Canadian immigration agents. The farmer is the man that Canada wants and she finds Americans the most profitable recipients of her land bounty.

While in its political platform the Liberal party condemns the giving of subsidies Canada is now in the height of a raid upon her national treasury for subsidizing enterprises of every description. Sir Wilfrid, while announcing his disbelief in the principle of subsidy, sees in it a chance to strike a blow for Canada's industrial freedom from the United States. The dance is a merry one. Railroads, canals, mines, smelters, mills and a hundred and one other enterprises now clamor for favors to enable them to compete with the Americans

The United Kingdom and Germany are the only two countries in the world which buy more goods of the United States than Canada. Sir Wilfrid expresses his belief that when all concerned have been brought to a realization of the foolishness of discord among natural allies and Canada shall have reached the fuller growth which is coming in the near future, that the United States will find her largest customer at her very door. It becomes the United States to realize that trade-expansion like charity, begins at home.

THE REVOLUTION IN

THE MANY KINDS OF ACTIVITY IN THE TEACH
CULTURE AS ILLUSTRATED BY THE AGRICULTU
OF CORNELL UNIVERSITY — SCIENTIFIC COURS
THOROUGHNESS, EXTENSION WORK, NATURE
GANIZATIONS OF CHILDREN, READING COURSES
FOR FARMERS' WIVES — THE NEW IDEALS O

BY

PROFESSOR L. H. BAILE
OF CORNELL UNIVERSITY

MORE than half the people of the United States live on farms. It is probable that the proper balance of production and consumption will make it necessary that at least half our population always shall be farmers. It is evident that the education of these farmers is one of the great problems now before the world.

Every state and territory has one institution devoted more or less directly to the education of farmers. Some states have more than one. It is probable, however, that fully half the energies of the agricultural colleges are devoted to the mechanic arts—a subject which they are under obligation to foster by the terms of the national grant under which they exist. Whilst the amount of money and energy that are devoted directly to agricultural education seems to be very great, it is nevertheless small when compared with that expended in other professional and technical education and considered in relation to the vast population that it is intended to reach. Considered with reference to the mere vastness of the field, it is not strange that the results of agricultural education sometimes seem to be small. In New York State there are about one million people on farms. New York State has one agricultural college, in which, with the exception of dairy husbandry, there is not one well equipped class-room or laboratory in the practical agricultural branches. What can it do for one million people?

Professional work, mechanic and transportational arts, tend to draw people into communities; thereby are these people easily reached. Farming tends rather to scatter its people, and farmers come together only incidentally, and are relatively difficult to reach. Moreover, the f
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eventually, to the degree of Doctor of Philosophy.

This College of Agriculture is one of ten coördinate colleges and departments of Cornell University. It is on an equality with all of these colleges so far as entrance requirements and character of work are concerned, and its degrees are of equal standing. Although the college is a complete organism, it has no home or central building. Its work is scattered here and there in class-rooms and laboratories. A handsome dairy building, of gray stone and well equipped, forms one corner of a building that is hoped for. In land, the college has a general farm of 125 acres, in a profitable rotation-crop system of farming, and ten acres of orchards and gardens, supplemented by a small amount of glass. In books, it is rich. It has also been fortunate to have had the guidance of a wise and persistent leader, Professor I. P. Roberts, who for thirty years has shaped and welded the courses of instruction into the complex systems of university curricula. The college has been fortunate in the freedom and breadth of its teaching, in its democratic atmosphere, and in its location in the country. It never adopted the compulsory labor system, and thereby it has been free from the restrictions of the training-school ideal. Its purpose is to give the student a liberal education by the use of rural subjects. It is not a professional school. Yet it is interesting to note that as great a proportion of its students and graduates return to the farm as from the separate and special agricultural colleges. Recent investigations have shown that of all the former students and graduates, eighty-seven per cent. are now engaged in some kind of agricultural work; of the graduates alone, eighty-five per cent. are thus engaged; and of the winter-course students, ninety-five per cent. have returned to agricultural vocations. Its faculty believes, however, that farming can be aided quite as much by awakening public sentiment in favor of the farm as by training men to be actual farmers; for, after all, the farmer of the future is not to be a man by himself but a man among men.

The regular course, leading to an academic degree, comprises four years. The first two years are given to fundamental sciences and correlated subjects. The last two years are mostly elective work in agriculture, horticulture, dairy husbandry, agricultural chemistry, entomology, botany. In addition to this regular course, there is offered a two-year special course, open to well-prepared students who desire to select the special agricultural subjects alone.

Post-graduate work is a strong feature of the college. From every part of North America the post-graduate students come with the object of gaining new experience in an eastern institution before taking up work in experiment stations and colleges, or in special businesses.

Where do the students come from? Mostly from the farm. They come for a purpose. They are well developed, well bred young men who have had much practical contact with things. They are quick to discern what instruction is relevant. Most of them are students with imagination and of large hopes. They look at things broadly. They are frugal of both money and time. Most of those who take the special course expect to return to the farm. Time was when the two-year man could hope for a position in an agricultural college or an experiment station, but the struggle for existence is now too severe. There are not positions enough for them all, and in the long run the fittest win and persist. Even the graduate of a four years' course now stands little chance of securing the good positions in the institutions; he must have had at least one post-graduate degree, and this is, in part, the secret of the demand for post-graduate courses in agriculture.

Those who have not followed the phenomenal recent advancement of knowledge and practice related to agriculture do not understand the position and point of view of the successful present-day farmer. I recall an incident. A colleague, teaching in a literary chair, desired that a young kinsman take an agricultural course, because the young man had made little headway in life although holding a degree from the academic department of one of our best universities. I asked how the young man could find any better opportunity of succeeding in agriculture. "He is bright, well educated, well read and an easy speaker," my colleague replied. I explained that these are good qualifications, but not sufficient to make the young man a good teacher of agriculture; the youth should have experience and judgment. "He could interest the farmers," replied my friend, "and if he really did not know the subject he could

make them believe that he did." This might have been the old thought in regard to teaching the farmer, but it is not the new thought. No man is readier to prick a bubble of make-believe than the farmer. It has been my privilege to speak to many classes of people, but I have found no people who ask so many direct, purposeful and penetrating questions as the farmers do.

Do the students who return to the farm make successful farmers? Yes, if they have the native ability. It does not follow that because a man grades well in his class that he makes a good business man; but other things being equal, the better the class grade the better the farmer. For myself, I care less whether the student can improve his yields than that he improve his mind. Even though the college man raise no more wheat than his neighbor, he will have more satisfaction in raising it. He will know why he turns the clod; he will challenge the worm that burrows in the furrow; his eye will follow the field mouse that scuds under the grass; he will see the wild fowl winging its way across the heaven. All these things will add to the meaning of life, and they are his. But the college man has the benefit of definite and relevant knowledge, and he should be able to apply it for the betterment of his farm. In fact, he does apply it. His pride is quickened. He knows that he is a marked man. His place shows it. With joy and enthusiasm he goes back to the farm, determined to improve every foot of its soil and every item of its detail. He works towards ideals. If education does not help the farmer, then it cannot be expected to help any other man.

But whilst the larger number of students come from the farm, there are some who come directly from the city. For one reason or another they have been attracted to country life. Some of them have spent a vacation in the country. Others are merely tired of city life. These men are likely to be good students, but they are usually undiscriminating. All instruction is equally important. They have no yard-stick of experience with which to measure it. These men are advised to spend some time on a good farm before graduation. The university farm will afford them some practice, but no institutional farm can give the economic and industrial problems and the round of events that a farmer's farm does. Some of these city students make first-class successful

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the child to its environment. If the person sees nothing of interest in plants and fields and birds and the out-of-doors, he can have little vital interest in farming. Leaflets were issued for the teacher and easy lessons for the children, and the children were organized into junior naturalist clubs, "to the end," as the club charter reads, "that every member thereof shall love the country and be content to live therein."

It is often asked if these leaflets have really been introduced into the schools. We hope not, if it is meant that they are used as formal texts. They are intended as helps to the teacher. Nor is it expected that all teachers —nor even the majority of teachers—will use them; but their influence surely has been felt as one of the means in the general awakening of interest in nature for its own sake. If the leaflets have value, it is in their spirit more than in their information, for the informational tract has little power to awaken enthusiasm in the young. How many teachers are helped by the leaflets, no one can say; but about 20,000 teachers are receiving them by their own request.

Of the junior naturalists, it is easier to give specific reports, for the members are enrolled at the central bureau and each club makes its monthly report on the things that have been seen and studied. A recent children's lesson was devoted in part to last year's birds' nests, and as these lines are written hundreds of nests, sent by the boys and girls of the state, are piled in the rooms of the nature-study office, and "Uncle John," to whom the children write, has not yet found the time to open all the boxes, great and small, that come by mail and express. Twenty thousand children in New York State, at this writing, are definitely enrolled as junior naturalists, with all the rights and privileges appertaining thereto.

The reading-courses reach the farmers themselves, about twenty-seven thousand in number; and at this writing a coördinate course for farmer's wives is being established, already with a following in the state of six thousand women. This reading-course is designed primarily to touch those farmers who do not care to read books, although very many habitual readers of agricultural books are enrolled with the movement. The college prepares the literature in the form of simple and condensed lessons. The reading-course culminates in a short course of instruction at the university, given during the winter, and open to all farmers of New York State.

The nature-study propaganda has done something to interest the schools in the rural problem; it is now proposed to add the farmers' reading-lessons to its literature and to introduce them, as opportunity offers, into the rural schools as texts and supplementary reading. Thereby, it is hoped that definite agricultural instruction may be introduced into some of the schools under conditions that will make it really useful and vital; and in this work the college is seconded by the State Department of Public Instruction.

All these enterprises require a large publishing interest, the editorial supervision of which is itself a business of much importance. The stated serial publications of the college are: *Experiment Station Bulletins, Nature-Study Quarterly, Junior Naturalist Monthly, Home Nature-Study Lessons, Farmers' Reading-Course Lessons, Farmers' Wives' Lessons.*

This running sketch will reassure the reader, I hope, that the agricultural condition is receiving its share of the world's thought. Some of the work of one college has been outlined. There is also a most efficient state experiment station at Geneva, which also is touching the farmers of the Empire State. Recently a "School of Practical Agriculture and Horticulture" has been established by means of private funds at Briarcliff Manor, near New York City, under the directorate of George T. Powell. There are other private agricultural schools. There is at least one college and experiment station in every state and territory. There are several in the Canadian provinces. There is a department of agriculture at Washington, more powerful than any similar bureau in the world. There are state departments of agriculture, institutes maintained by public money, a large and growing agricultural press. Hundreds of trained and earnest men are devoting their lives to the development of agricultural science and literature. The farmer has been touched at every point of his business. Immensely has the tone of farming been raised. So novel are the ideals of the farmer to-day that the writings of the last generation do not appeal to him; they belong to another age.

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NOT BECAUSE THE PEOPLE ARE IN ANY SENS
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OF ENGLAND AND THE DANGER FROM COLON

BY

SYDNEY BROOKS

This is the fourth article in a series describing the political condition of the principal European
century — Germany, Austria and Italy having been described in pre

IT is not always the most durable portion of a great man's work that makes him widest known. How many of Macaulay's million readers remember that the glittering and resonant historian was also the framer of the Indian Penal Code? Yet it may well happen that justice will be administered to five hundred million people on the lines laid down by Macaulay long after his fame as a writer has passed away. For every man who thinks of Napoleon as an administrator there are ten thousand who think of him as a captain. That tremendous prodigy who united in himself the military genius of Cæsar and the civic wisdom of the founders of the American Constitution, is still popularly remembered and worshipped mainly for what was dramatic and annihilating and ephemeral in his achievements. Napoleon the conqueror was a scourge that passed, destructive, devouring, but in the long run the victim of its own passions. The end was self-neutralization; after convulsing the world it subsided to leave things fundamentally as they were. But there is a work of Napoleon's that survives changes and revolutions and grows only firmer with the years. That work is the Napoleonic settlement of the Revolution—in other words, modern France. Completed within a decade, amid the alarms of war and with only chaos as a starting point, it is at once the most enduring and the most amazing achievment of that surpassing intellect. The whole centralized administration of France, which emerges unshaken from every crisis, was his creation. It was he who organized the existing administrative divisions of the departments, with the officials supervising them and the local assemblies attached
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paternal rule. The variegated history of the last hundred years goes to prove that it will change only with a decisive change in the essentials of the French character. Whether parliamentary government, as practised under the third Republic, is compatible with the centralized system which Napoleon intended to be under the direction of a single controlling hand, is the greatest and most baffling of the hidden problems of France. Nothing can be predicated of it, except this—that if and when it is found that the two cannot live side by side, it will not be the Napoleonic inheritance that the French will discard. It will be the Republic.

This is not to say that the ill-assorted conjunction of the parliamentary system with a centralized bureaucracy must necessarily lead to a crisis in which the nation will be called upon to choose roughly between the two. I particularly wish to guard myself against any such interpretation, believing that the Republic is deeply founded on the contentment of the people, and so long as peace obtains will survive all internal shocks. Nevertheless, as in Spain and Italy, so in France it has borne disastrous fruit. When nearly 600 deputies, without parliamentary traditions, without the cohesion and sense of responsibility which only party government can instil, scramble for a hold on the reins of power that were expressly fashioned for the control of a single autocrat, the result must be a needless duplication of offices and the conversion of the deputy into a wholesale dispenser of places, and of the country into a nation of needy office-holders. This is what has happened in France, with results as prejudicial to the finances as it is to the independence and *morale* of the people.

But as an argument against the stability of the present *régime* a great deal too much can be, and in my opinion, has been, made out of this, as well as out of the many other points in which the third Republic falls short of democratic perfection. In a very laborious, but at times too dogmatic a work, Mr. J. E. C. Bodley has compiled a list of the errors, follies, incongruities and backholdings of the Republic which would put its instability and unpopularity beyond question, did not one remember that a government is always better than even the most accurate description of it. One could easily, and indeed the thing has been done time and again, draw a picture of American politics which, while perfectly truthful and treating only of the admitted facts, would make it logically impossible to escape the conclusion that the American commonwealth was doomed. Mr. Bodley's facts are, one and all, indisputable, but the impression he makes them convey is one, I believe, that the event will falsify.

No critic of France has yet been able to hide his merriment over the official watchwords of the Republic—"Liberty, Equality and Fraternity,"—especially when he comes upon them over the door of a prison. They are indeed an illuminating token of that passion for referring everything to an idea, for standing by the great name instead of the great thing, and of that pitiless and pitiful logic, the foe to the golden virtue of compromise, which distinguish the French intellect. And it is easy to show, at any rate from the Anglo-Saxon standpoint, that France does not wholly live up to her self-imposed maxims; that Liberty, for instance, is rather a dogma to define or expound, a subject for the philosophy of the lecture-room or library, than a factor in everyday life; that in French eyes it is quite compatible with domiciliary visits, with having a man arrested, as Colonel Picquart was, on a charge withheld from him and allowing the magistrates to browbeat him into a damaging confession, with the general principle that a person is guilty until proved innocent, and with the absence of a law of *habeas corpus*.

And if we come to the finer shades that Liberty takes on in countries that do not make an official fetish of it—to matters, for example, of religious and political opinion—it is not difficult to prove that in a country where the President is forbidden to pronounce the name of God, or to enter a cathedral in state, where Sisters of Mercy can be driven out of hospitals, processions stopped, crucifixes removed from cemeteries, and school books banned because they "implied the existence of a God," where a small minority of rabid Freethinkers terrorize the Government into excluding the graduates of clerical schools from the service of the State, where Anti-Semitism has reached a bitterness of fanaticism unknown even in Austria, and where politicians and journalists without the excuse of loyalty to a great and historic party, harry and villify one another in a frenzy of "billingsgate"—in such a country it is not

difficult to prove that Liberty has a peculiar esoteric significance.

So, too, with equality and fraternity. A Parisian, it is noticed, is not displeased when a *gamin*, anxious for a tip, addresses him as "*Mon Prince*" or "*M. le Comte.*" Even with the advent of Republican simplicity, the French leaning towards decorations, especially decorations that carry with them the privilege of military salute, show no abatement. On the contrary, nobiliary titles, self assumed, and without a warrant in heraldry, have multiplied under the Third Republic with the audacity of Australian rabbits or American colonels, still it is now almost a distinction in Paris not to be a count and not to have the particle before one's name and not to wear the red ribbon of the Legion of Honor in one's button hole. The American idea of equality is, "You are as good as I;" the French, "I am as good as you," a very different thing. Nor has the official proclamation of fraternity done much to establish it in the hearts, as well as on the tongues of the people.

History indeed has made it peculiarly difficult for tolerance and charity to become unconscious elements of French life. Frenchmen acquired during the Jacobin conquest of the Revolution and have never lost the habit of regarding all political controversy as a desperate struggle between irreconcilable factors, a habit almost inevitable when the attack or defence of an entire system of government is the sole dividing line. It is to this conception of politics that we owe in part the violence of the Parisian press and the blood-stained record not only of the Commune, but of every crisis in the internal history of the country, the slaughter of Frenchmen by Frenchmen being the necessary outcome of an uncompromising devotion to logic. The bigotry of the Freethinkers is due to a similar way of looking at things religious. There must always be the spirit of persecution when a nation is split up into two rival camps, those who are for the church and those who are against it. France has never had the good fortune to be divided into a number of sects, like England or the United States, that neutralise one another and so make for tolerance.

All these are points which Mr. Bodley and others before him strongly labor. But what after all do they amount to? They show that the French do not practice what they preach, a phenomenon so frequently found in men and nations that no
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the Spanish. Their exact and logical turn of mind, which must for ever be formulating and defining, is in ceaseless and instinctive revolt against the traditions and unwritten codes, the half-lights and compromises and the silent understandings that direct the workings of representative government in England.

I very much doubt whether even the English, with their genius for the happy political mean, would be able to work their constitution if it were suddenly offered them as a free gift. The efforts of European nations to reproduce it have, at any rate, merely resulted in the setting up of legislative machinery, admirable and perfect to look at, but with the unhappy knack of disabling all its engineers. It would have been well for France if the various monarchical parties could have sunk their rivalries and formed with the clericals a strong opposition that would have forced the Republicans to stand together. In that case there would have been two powerful parties with definite and antagonistic policies. As it is, the Chamber of Deputies is split up into a dozen or so groups whose permutations and combinations are as devoid of interest as of political principle.

Except in this failing, from which America has been protected by the strength of party organization, most of the charges brought against the Chamber of Deputies would be applicable to Congress. The Chambers, it is said truly, do not represent what is best in the French nation, but of 582 deputies in the lower house only about 60 are connected with commerce and industry, not more than 70 with agriculture, about 25 are usually teachers, some 50 are returned as of no occupation, while the journalists average nearly 60, the lawyers 150, the doctors 60, and retired functionaries between 80 and 90. Nor as an embodiment of the thrift and industry that are the basis of the greatness of France is the Senate much better. It swarms with country doctors, publicists unknown to fame, and minor prophets of free thought. "Senators," says Mr. Bodley, "are usually the second-rate exponents of the callings practised in perfection by the members of the Institute." Its position is not one of much influence, though, as it showed during the Boulanger crisis, it is not so liable as the lower house to be carried away by momentary passions, and is more apt to reflect fairly well the middle-class feeling, which is always in favor of retaining the existing form of government. It is said, too, that the Chamber is extravagant, that deputies seek popularity among their constituents by creating useless posts and diverting the national funds to local needs. And, finally, it is urged that candidates are really evolved by "machines," that the people take little interest in them or their careers, and that official pressure interferes with the popular choice. All three charges are true. The people are not keen politicians, and in the small towns and villages a committee of officeholders or would-be officeholders take affairs into their own hands. Out of 10,000,000 electors there are usually 3,000,000 who do not take the trouble to vote. The average peasant rarely even knows the name of the deputy who represents him, and hears with equal indifference of his arrest for bribery or his election to the ministry. Official pressure is brought to bear undisguisedly. The prefects of the department are summoned to Paris on the eve of an election to consult with the Minister of the Interior. The prefects are the keystone of the administrative arch erected by Napoleon. Under them are the mayors and communal councils, whose decrees they revise and annul at will, and the whole army of functionaries, from the school master, writ server, tax collector, post office inspector, gendarme and rural policeman down to the tobacco dealer, letter carrier and road mender. All of these officials depend upon the favor either of the prefect or the Deputy for their security and advancement, and a minister has thus under his hands an immense engine of coercion.

All this sounds undemocratic enough, and even ominous, but does it really affect the stability of the Republic? Does it even show that the Republic is out of harmony with the wishes and instincts of the masses? The fact that European and American critics discover and deplore in the United States precisely the same defects should make one pause before pronouncing the French Republic in danger. Is it not rightly charged against Congress that it is reckless in voting money for local improvements and pension bills, that it is overrun with lawyers, and does not worthily represent what is best in the country? Is not a large portion of a congressman's time devoted to soliciting jobs for his constituents, and can the average Ameri-

can be honestly said to interest himself in the doings of the national legislature? Anyone who has tried the experiment of asking an ordinary inhabitant of New York State to name, say, four of the thirty-four congressmen who represent him at Washington will discover that the French are not alone in their indifference to politics and politicians. And as for official pressure, while, of course, the machinery for it does not exist in the United States, it is notorious that every office-holder is more or less an electioneering agent for the party that has appointed him. Yet with all these imperfections, and many others from which the French are free—for French elections are conspicuously exempt from fraud or bribery or intimidation—nobody dreams of declaring the American commonwealth to be imperilled. The situation in France becomes much clearer from the moment we have grasped the fact that, as in America, the people are superior to the politicians, and that the real life and work of the nation proceed uninterrupted by the fretful clamor of politics. France, as a deputy once rightly observed, presents the curious spectacle of "a tranquil people with agitated legislators."

Moreover, the Republic has given proof after proof of a positive as well as a negative strength. Already it has lasted longer than any *régime* since the old monarchy collapsed in 1792. It has survived repeated crises and resisted without serious difficulty all efforts to upset it. It defeated the royalists in a pitched battle on May 16, 1877, and the royalists themselves have since completed the rout. It came out victorious from the long struggle with the church between 1880 and 1885; it withstood the temptation to Cæsarism in 1889; the Panama scandals failed to shake it, and from the long and hideous nightmare of the Dreyfus affair, in which the rag-tag and bob-tail of clericalism, anti-semitism, royalism and nationalism, encouraged by a few, but only a few, restless soldiers, were drawn up against it, it has emerged with fresh confidence and vigor. And beyond this the Republic has founded an immense colonial empire, has armed the nation to the teeth without impairing its republicanism, and anti-clerical though it is, has forced the official approbation of the vatican. These are remarkable achievements, but even they pale before the greatest of all, the formation of

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nuncery. The Royalists of whatever section are utterly discredited and I cannot see that socialism is yet menacing enough to make France cry out for "a savior of society." So long as peace lasts the Republic is secure. Whether a war, successful or otherwise, might not result in stampeding the nation into Cæsarism is a question to which only speculative answers can be returned. It is, however, proper to consider whether there is anything in the foreign or colonial policy of the country that brings war within measurable distance.

It will, I think, be found that such a danger exists and that the colonial policy is responsible for it. France is attempting a double programme, the prosecution of which would have been barely possible for her at the height of her strength and guided by the masterful genius of Napoleon. She is striving to be at once a great continental and a great colonial power, and her twofold ambition brings her across the path of Germany, the strongest military, and England the strongest naval power in the world. In such a project, situated as France is, there seems hardly a chance of final success. Even with a more healthily growing population and a more flourishing budget, it would be a physical impossibility for her to remain always on a war footing in Europe, and at the same time to take up arms at the ends of the earth. *Il faut choisir.* Her regeneration since the Franco-Prussian war, the readiness with which she paid off the indemnity, the splendid alacrity with which she remodelled her military forces and safe-gaurded her international position, are things that no one can belittle. In their display of patience and self-denial, they constitute, in the words of Baron Pierre de Coubertin, "the greatest moral victory ever won by a nation over itself." France has shown more than once in her history that she cannot be ruined, but never more completely or with more admirable resolution than in the last quarter of a century.

But whether from the restlessness born of long-deferred hope, or from a growing consciousness that *la revanche* is really beyond her powers, or from the infectious example of other nations, France has within the last twenty years turned more and more from her natural policy to plunge into what for her has turned out to be a slough of colonial expansion. Colonies that are self-supporting, that attract trade and settlers, are as a rule sources of strength to the parent nation. But the French colonies are a source of weakness to France. Barely one of them has yet been able to show a balance on the right side. Martinique, Gaudaloupe and Réunion are of adult years, and should have ceased to require subsidies, yet they still receive several millions. Algeria, splendidly situated though it is, is still, after an occupation of over seventy years, a financial failure and a perpetual charge on the national exchequer. Senegal and the Soudan and the French possessions in China and Oceania tell the same tale. As for the Congo, its financial condition seems beyond hope of redemption. Wherever one turns a similar state of affairs confronts one. The French empire, with its area of 3,740,000 square miles and its population of 56,000,000, returns no practical equivalent for the immense outlay devoted to it. Exclusive of Algeria and Tunis, the first of which is regarded as an integral part of France and the second is under the Minister for Foreign Affairs, the colonies need an annual dole of from $20,000,000 to $25,000,000; they attract no colonists and very little trade; they impoverish France instead of reinforcing her.

For this there are several reasons on the surface. For one thing, France, like Germany, has come too late into the field to do more than annex what England did not care to take for herself. For another, the all but stationary condition of the population, which is not due to any lack of vigor in the race, but solely to the dowry system and the testamentary laws, deprives France of the leading motive for expansion. For a third, education and environment and his intense passion for his native soil make it a torture for the average Frenchman to pull up his stakes in France and embark on the rough-and-tumble life of a colonist. For a fourth, France is by instinct and training a military nation and a bureaucratic nation, and experience has shown that the soldier and the functionary are not the proper foundation to build empires on. The essence of colonization is not conquest, but development; yet, to read some French writers, one would think that for the establishment of a prosperous colony it was enough to send out into the wilds of the Sahara the flag, a Maxim, and a salaried official. With the French Chauvinists to conquer is to colonize. They clamor for more territory, for

fresh expeditions, much as an amateur runs after bric-a-brac very eagerly, very indiscriminately, and not knowing or caring whether the object sought after is worth having or no. Colonel Marchand's appearance at Fashoda was a proof of a deplorable lack of system somewhere, and the quietude with which the French people as a whole took his ignominious expulsion was in itself an indirect censure on the policy which laid France and a gallant Frenchman open to such a galling rebuff. There is no sense of imperialism among the common people of France, as there was among the Romans, as there is to-day among the English. The colonial party is a noisy and in official and parliamentary circles an influential faction, but it carries little weight outside Paris. Such as it is, however, it may yet be the means of speeding France to another *débâcle*. Some such catastrophe as overwhelmed the Italians at Adowa may even now be maturing for France on the frontiers of Morocco.

One must remember that the foreign policy of the Republic is as cautious and pacific as its colonial policy is unsystematic and provocative. The French peasant, who is the backbone of the country, is absolutely against a land war that involves the possibility of invasion. He has learned what invasion means and the lesson endures. The Republic has striven magnificently and with success to safeguard its territory. Spain is bound to her northern neighbor with a chain that nothing can break so long as cosmopolitan finance remains one of the decisive factors of international politics. The Tunis question has passed the danger point and Italy will never stir up an aggressive war against France. The double line of fortresses that stretches along the eastern frontier is a barrier which the German War Office itself is known to regard as insurmountable. The question of Belgium is not yet one of practical moment, and when it does crop up, is more likely to be settled by a friendly compromise with Germany.

So far then as the Continent is concerned France is exceedingly unlikely either to provoke or to be drawn into war. There remains the problem of England, and it is here where the colonial policy of the Republic mates for difficulties. England has steadily ousted Germany from the position of the supreme object of French hatred. The doctrine of *la revanche* has onl
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THE GOOD ROADS TRAIN

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By

EARL MAYO

THE National Good Roads Association, assisted by Director Mr. Martin Dodge, Director of the Government Bureau of Public Roads Inquiries, and various automobile interests in the improvement of our good highways, has given the people of the Middle West and South a very practical object lesson in the construction and the value of good roads. They have built improved highways at the very doors of the people in a number of communities in the Mississippi valley, showing them by actual example how to make fine modern highways out of the materials which they have at hand.

It has been an object lesson with possible practical results. They brought nothing which the people themselves might not have, using only the raw material which the local community already had. And they created in many places a desire for something better, by an example of it.

The "good roads" train, is the novel and effective means of imparting this instruction. It has already made its first trip, and the enthusiasm with which it was received, points to the success of the plan. It is likely to be made a permanent feature of instruction in making good roads. Other trains like it will be sent through other parts of the country. On this initial trip, the men in charge of the train have received more requests than they can comply with to give exhibitions of road making.

The idea of the train originated in the Good Roads Convention held in Chicago last November. At that time it was hoped that Congress would make a considerable appropriation for the building of specimen highways in different parts of the country. Congress did increase the appropriation for the Bureau of Public Roads inquiries of which Mr. Dodge, of Ohio, has been in charge for several years, but it did not appropriate money for actual road building, but the Good Roads Association decided upon concerted private effort to accomplish the same end in a quiet and yet effective.

It was thus that the "good roads" train was hit upon. The manufacturers of road-building apparatus contributed the use of the best machinery and men to operate it. The Illinois Central Raiload Company offered the train. Early Spring is a more favorable time for work in the Southern than in the Northern states, and New Orleans was made the starting point. The train left Chicago for New Orleans on April 20th. The place selected to give the first object lesson in scientific road building was Carrollton Avenue in a suburb of New

NOTE—This is, of course, only one very small, though unique, incident in a great movement. This magazine intends to deal with other and larger phases of the Good Roads movement in future numbers.

CAROLLTON AVENUE, NEW ORLEANS

This street, on the outskirts of the city, was chosen for improvement. The picture was taken on the morning of April 26th, before the experiment was begun

THE ROAD BUILDER

This machine is propelled by a twelve-mule team—eight before and eight behind—and moves earth at a rate of 125 yards an hour. Picture taken April 26th

Orleans. It was hardly worthy to be called a street. It ran through very low ground, no attempt had ever been made to grade it and it was practically impassable for the greater portion of the year. It was decided to build a dirt road using only the material at hand—a lumpy clay baked almost to the solidity of stone by the heat of the sun.

This was the soil on which the men and machinery of the good roads train were put to work. A sixteen-mule team was hitched to the principal machine and it tore through the sun-baked soil, ploughing up a broad furrow from the side of the street, throwing it upon a conveyor which in turn deposited it on the middle of the roadway. Under the unfavorable conditions encountered the machine moved more than one hundred yards of earth per hour and did the work of more than fifty men with teams, plows and scrapers.

THE GRADER AT WORK

Levelling off the earth thrown up by the road-building machine. Picture taken April 27th

CAROLLTON AVENUE, NEW ORLEANS

The same section of road as that shown on page 957. This picture was taken April 27th when, in a day, a mile of impassable roadway had been converted into a model street

Behind this road-builder came harrows to break up and evenly distribute the earth; graders to round it off so as to insure proper drainage, and rollers to press it down. At the end of two days the city had a fine stretch of well built comparatively waterproof road a mile in length, in place of the impassable "avenue"

The city officials gave their hearty co-operation, and furnished prison labor and sixteen mule teams with drivers. The achievement was viewed with astonishment by the citizens of New Orleans who had come to consider this particular portion of their street system as hopeless. No crushed rocks, shells or other foreign materials were used in making this road and it is not regarded by the Government experts in charge as being by any means an ideal highway. But it is interesting and highly instructive as showing what may be accomplished with the most accessible material.

The train remained in New Orleans during the Good Roads convention which was held there on April 29th and 30th. It then went on its way back toward Chicago, stopping at frequent intervals to give the residents of Mississippi, Tennessee, Kentucky and Illinois practical lessons.

"This subject has been agitated for years," says Mr. Dodge. "Reports and pamphlets have been issued, conventions have been held, and the Government, through the Public Roads Inquiries Bureau, which is part of the Department of Agriculture, has examined soils, given instructions in the methods of road-building, answered questions, experimented and done everything possible within the limited scope marked out for it, to assist in spreading knowledge and creating sentiment in regard to this important subject. Last year, in connection with local authorities, we constructed some short sample pieces of roadway at Port Huron, Mich., Springfield, O., Topeka, Kan. and one or two other places. I found then, as we are proving again now in connection with this "good roads" train, that more people will flock to see the actual construction and operation of a model road than will go to a convention and hear the subject discussed by the highest authorities who can speak upon it.

"In this fact I believe is to be found the cue for our future operations. If a strip of thoroughly good roadway only a quarter of a mile long could be laid in every township of the country to show the people what modern methods and machinery can accomplish with the least promising materials it would prove a mighty leverage in doing away with the disgraceful conditions of the roads in a great part of the country. Taking an average of the whole country it is true, undoubtedly, that it costs more to haul the products of the soil fifteen miles by wagon than it does to convey them 250 miles by rail. The burden of this waste in time, labor and money falls upon the agricultural producer.

"So far as our work has extended in the South and West we find that people of all classes are taking a very lively interest in it. With the desire for better conditions firmly established, and the knowledge of methods and machinery which can be taught by practical illustration, it need be a matter of a few years only before our highways become a source of national pride instead of being, as they now are, in many parts of the country, a national disgrace."

THE "GOOD ROADS" TRAIN

CHILDREN OF THE WHITTIER KINDERGARTEN (FREE DAY SCHOOL) TENDING THEIR VEGETABLE GARDEN

THE SALVATION OF THE NEGRO

THE VALUE OF THE WORK OF HAMPTON INSTITUTE AS IT HAS BEEN TESTED BY TIME—A SUCCINCT STATEMENT OF THE RACE PROBLEM AND THE SUCCESSFUL METHOD OF ITS SOLUTION

BY

BOOKER T. WASHINGTON

PRINCIPAL OF TUSKEGEE NORMAL AND INDUSTRIAL INSTITUTE

Photographically Illustrated by Frances Benjamin Johnston

WHEN General Samuel C. Armstrong founded the Hampton Institute, it was his aim to found an institution that should train Negro youths to meet conditions as they existed in the South. Dr. H. B. Frissell, the wise successor of Gen. Armstrong, has continued the policy of the founder. Of course, there might have been conditions that Gen. Armstrong did not like and other conditions for which he might have preferred to prepare his students, but he chose to prepare them for conditions that actually existed. He refused to deal in theories, or mere flights of imagination. As nearly as I have been able to understand Gen. Armstrong and his successor Dr. Frissell, I do not think that I misrepresent them when I say that their object has been to consider the history of the race with which they were dealing, to consider the occupations which were open to it and by which it for the most part earns its living, and lastly its relations to its white neighbor. In relation to the history of the Negro, Hampton considered the fact that it was dealing with a race that had no necessity to labor in its native land before being brought to America; and which was forced, for two-hundred and fifty years to labor under circumstances not calculated to make it love labor, or to instil into it in any large degree a sense of the dignity of labor. Slavery did however, leave the four million Negroes emancipated with a higher degree of civilization than was perhaps possessed by any equal number of Negroes to be found anywhere else. Out of slavery the Negro got the Christian religion, the English language, a knowledge of agriculture, domestic life, and, in many cases, a high degree of mechanical skill. But notwithstanding all this the Negro felt that he was "being worked," and there is a vast difference between "working" and "being worked." In the one case the individual exerts himself because he loves labor and sees in it gain, beauty and dignity; in the other case the individual exerts himself because of necessity, or because

of being compelled to do so. I do not wish to convey the idea that all slaves "worked" because of being forced to do so, for there were many noble Negro men and women to whom Southern white men can point who, in slavery even, considered it a disgrace to be idle and a privilege to labor. But, as a rule, the labor of the slave period was forced.

It was, then, rightly, the first object of Hampton to make the Negro student appreciate the difference between forced labor and free labor; in a word to teach him to love labor for its own sake, and not to feel that he must labor only when necessity or force was employed to drive him to it. It was further the object of Hampton to teach the Negro youth that all forms of labor whether with the head or hand were equally honorable; that cooking food, or laundering, thoroughly done, were just as commendable as teaching school or clerking in a store. This was no easy task to undertake at the time that Hampton began its work. In a large degree it had been one of the Negro's chief ambitions to get free so that he could get to the point where he would not have to work, but could be a "gentleman." It had been a most cherished idea that education, if it had any value, was to enable one to live without work with the hand. To have this idea corrected on the threshold of his freedom at an institution of learning where the chief aim was to teach one to work, was something that was hard for the Negro to understand. It was a hard and perplexing task that Hampton undertook, but it was faced bravely and wisely. At the time there was not only no industrial or manual training school for Negroes anywhere in the country but there were practically none for white people, North or South. When Hampton was started few if any persons in this country had seriously considered the subject of hand-training as a

PRACTICAL AGRICULTURE
A lesson in scientific farming

A LESSON ON "SEEDS THAT FLY"

Nature studies which form a foundation for more advanced agricultural training

SLOYD AT THE WHITTIER (PUBLIC DAY SCHOOL)
The beginnings of manual training where boys and girls are taught to make small useful wooden articles

means of helping to train the mind, or as a moral force. So far from industrial education being a narrow and limited education I believe that, in the future more than at present, people are going to see that thorough training of hand, head, and heart, is liberal education, and that the training of the head alone is narrow education.

To my mind the best education is that which will fit one to do in the best manner the things that are open to him in the community in which he is to reside. And I be-

GIRLS' SLOYD AT HAMPTON
Advanced manual training

COMPLETING FINE INTERIOR WOODWORK

On a house constructed entirely by Hampton students under expert supervision. All woodwork, panels, rails, ornaments, etc , have been made by other Hampton students at their own saw-mill

lieve that the founders of the Hampton Institute and those who control it now will not very far disagree with this definition. This definition must not be taken to mean that the Negro youth be limited in culture or confined to any especial occupations, but it does mean to proceed from the known to the unknown, from that which one is sure that he can find to do to the uncertain and the unknown —to use what is immediately about one as stepping stones to more difficult and more important tasks. With those ideas in mind the officers of the Hampton Institute analyzed the condition of the Negro as it was when freedom found him. In

AN OUTDOOR SKETCHING CLASS

Training for hand, eye, and a taste for the beautiful

AN OLD-TIME NEGRO CABIN

Exactly as it was found. A relic of "befo' de wah," of which comparatively few remain in the viciniy of the prosperous and growing section around Hampton

A HOME BUILT AND OWNED BY HAMPTON GRADUATES—A PROSPEROUS MAN AND HIS WIFE

Its well-to-do air, neatness and comfort are shown in contrast to the old-time tumbled-down Negro cabins

few institutions for either race where the mental discipline is so severe and systematic as at Hampton. It is true that in a large degree the old method of merely making the student commit to memory something that some one else has thought out and reduced to rules or a system has been largely discarded for the newer and more rational method of laying more stress upon teaching the student to think, to investigate, to systematize; to give him power instead of a merely trained memory. In a word, as the illustrations used in connection with this article will show, the student is taught to go into the shop, into the field, to get hold of actual live problems in arithmetic and geometry instead of largely using mere book problems that in too many

SERVING MEALS TO THE HAMPTON STUDENTS

Students help to pay their tuition by regular employment in the school and many serve as waiters and cooks at a fixed rate of wages

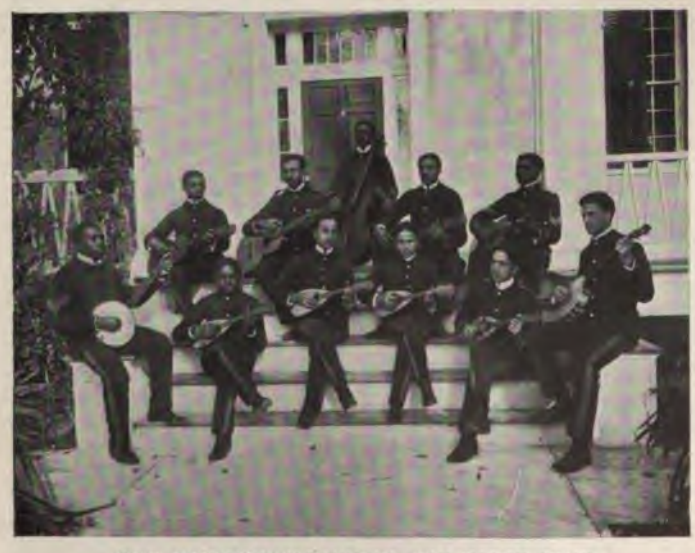
doing this it was found that by far the greater proportion of my race were living on the farms and were dependent upon agriculture in some form for their daily living. Clearly then agricultural training was the proper thing to begin with and the industry upon which to place the greatest emphasis; and from the founding of the institution up to the present, agricultural training has been the basis at Hampton just as it has been at the Tuskegee Institute which is an outgrowth from Hampton.

Some people, however, get the mistaken idea that there is little or no academic training at Hampton in connection with the industrial work. This is far from true; I know of

AN OLD-TIME RAMSHACKLE CORN-HOUSE AND STABLE

AN "OUTDOOR" LESSON IN ARITHMETIC
Calculating amount of lumber required and cost of construction of a green-house

cases do not train one for actual life. In grammar and physics the same plan is followed of using the great industrial plant as a kind of laboratory for the purpose of bringing the student into touch with life. Continuing, to use agriculture as one example of the many industries taught at Hampton, it is not only the object to teach the student how to make a living out of agriculture but to teach him to love and respect the industry to such an extent that he will consider it a privilege to be engaged in agricultural pursuits either for himself or for others. This love for agriculture is instilled into the student by teaching him to observe the processes of nature—to become so well acquainted with labor-saving machinery that he will be able to lift agriculture in a large degree out of mere drudgery into that atmosphere where it becomes dignified and beautiful.



THE HAMPTON MANDOLIN AND BANJO CLUB
Most of the students have fine voices and musical tastes

As a rule, the Negro is at his best in agricultural life in the country districts. He is at his

worst in too many cases in large cities and especially in the large cities of the North. One finds the best and most hopeful type of Negroes in the rural districts of the South. In the Northern cities the Negro finds the temptation and the severe competition in too many cases more than he can stand up against. The Negro must secure his foundation for citizenship very largely in agricultural pursuits. When he has grown strong in mind, purse and morals, in agriculture he can gradually learn to hold his own in a larger degree in the large cities.

Hampton kept in mind from the beginning the foundation in industry which slavery laid for the Negro. It kept in mind the fact that slavery taught the Negro such industries as agriculture, carpentry, cooking, laundering, etc., and that if as a free man he is to support himself and make himself valuable in his own community by keeping up with the latest and most progressive methods of industrial work he must be taught how to do things in the best way. I have heard the race question discussed by a good many people in various forms, but I have always maintained that the Negro's greatest and safest protection would come from his usefulness. I am almost ready to say that the whole question as to the future of the Negro in America hinges upon the question as to whether he can make himself so valuable to the community in which he lives that the community will feel that it cannot dispense with his presence. There is one test of what the Southern white man thinks of an intelligent, industrious, law-abiding, property-holding Negro that I have never seen fail. In all my experience in the South I have never seen a member of my race of this description get into trouble to the extent that a bond was required of him by the court that there were not dozens of white men ready to go upon his bond for any amount. I have never seen a Negro whose word could be relied upon try to borrow money at the bank or from individual Southern white men who did not get the same kind of accommodations that a Southern white man would have got.

BASKET BALL

PRACTICAL DAIRYING

THE SALUTE TO THE FLAG
Daily opening exercise at the Whittier School

Hampton kept in mind the fact that some influence must be brought to bear immediately after slavery upon the life of the Negro that would cause him to stick to and use the fundamental occupations which he learned in slavery as stepping stones. This institution recognized the fact that during slavery it was to the interest of the master to teach as many Negroes trades as possible, because the mechanic was more valuable to him financially than a common laborer. Many masters went further than this and taught their slaves trades because of their broader interest in them. But Gen. Armstrong at Hampton saw that unless some institution picked up the threads of industry where slavery dropped them, the Negro would not be taught the dignity of labor, that he would put all of his dependence upon political agitation and the fundamental occupations upon which all races must begin would pass from him into the hands of others.

As a result of Hampton's persistency in holding to its original purpose, many other institutions in the South are adopting its methods. At the present time all agricultural pursuits, and most of the mechanical trades, the mining industries, and all forms of domestic service are open to the Negro in the South and will remain open to him as long as he can perform the work as well or better than any one else can perform it.

In the next place, the Hampton Institute has kept in mind the relations between the two races. The Southern white man has been accustomed for nearly three hundred years to come into business and trade relations with the Negro. But Gen. Armstrong saw even farther into the problem. He saw that whenever the Negro became the owner of a farm, or became a good mechanic, and tax-payer and had money in the bank that, as a rule, his white neighbors had little fear of the vote of such a man. And, so at Hampton the cooking class, the class in laundering, in agriculture, in carpentry, in geometry, in history, means not the limitation of the Negro's development, but its broadening so that he becomes on the contrary a neighbor and a helper of the white man.

ALEXANDER JOHNSTON CASSATT

President of the Pennsylvania Railroad, and engineer, stock farmer, and an active friend of all out-of-door sport

ALEXANDER JOHNSTON C

RAILROAD PRESIDENT AND MAN OF AFFA

BY

FRANCIS NELSON BARKSDAL

THE gathering in of a fourteen-million-dollar property over night would create a ripple of comment even in the present days of stupendous deals, but in 1872 it was an unheard-of performance and even now the conditions surrounding its accomplishment place it in the list of deeds of notable generalship and give a key to the character of Mr. Cassatt to whose quick and bold intelligence its execution was due.

The Philadelphia, Wilmington & Baltimore Railroad Company, owned by New England capitalists, extended from Philadelphia to Baltimore and was operated in the interests of the Pennsylvania. The Baltimore & Ohio Railroad regarded this close alliance with exceeding jealousy, since that corporation coveted it as a means of reaching New York. Baltimore & Ohio agents, under instructions from the Garretts, had been secretly securing the stock, but quiet as their work had been pushed it had not escaped the watchful eye of Mr. Cassatt. When the Baltimore & Ohio management felt assured that sufficient shares had been acquired to secure control, Robert Garrett walked into the office of George B. Roberts, president of the Pennsylvania Railroad, one morning and exultingly remarked:

"Mr. Roberts, we have secured control of the Philadelphia, Wilmington & Baltimore Railroad. We are not disposed, however, to disturb your relations with the property, and you need not give yourself any uneasiness on that score."

"Well," replied Mr. Roberts, in his dry manner, "I did not know that you had progressed so far in your negotiations."

At the conclusion of the interview there was a conference between Mr. Roberts and Mr. Cassatt, which resulted in a meeting of the Pennsylvania Railroad directors in New York that night. The session was prolonged far into the morning hours, but at its conclusion a check was drawn for $14,949,052.20, and a block of st
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instruction, but his special proficiency in mathematics and the modern languages inclined him to the profession of engineering, and a few years' course of study in the great German university of Darmstaadt not only ripened the resolve, but served as a substantial basis for the superstructure of his life's work. Diligent in study, observant of conditions, enthusiastic of the future, the adoption of a course of technical training was the logical result of the return to America. The Rensaeller Polytechnic Institute at Troy offered the medium, and in 1859, when twenty years of age, young Cassatt emerged from his studies a civil engineer. Strong in his magnificent physical condition, the young engineer looked into the future with the calm assurance of success. A man of few words, but eminently one of action, there is no record that he made boasts of any goal which he had set for himself, but with the quiet determination which has distinguished his entire career, he packed his sextant and responded to a call for his services in the location of a railroad in Georgia. He returned to Philadelphia in 1861 and entered the service of the Pennsylvania Railroad Company, then dominated by John Edgar Thomson, third president of the corporation, and the brilliant engineer to whose indefatigable labors the then difficult work of constructing a railroad over the mountains was largely due. Col. Thomas A. Scott, vice-president of the Pennsylvania Railroad, and at that time Assistant Secretary of War, was his executive officer and under his immediate supervision the cadets of the service were trained.

Col. Scott picked his men with unerring judgment. Cassatt was of his kind, and his rise from one position of trust and responsibility to another was rapid and continuous. He was as thorough in the mastery of details as he was competent in their generalization. When he had a duty to perform he brought these characteristics to his aid, and the work was done better than other men could do it. Promotion under civil service had long been established as the keystone of the Pennsylvania Railroad organization. The road has always been operated by practical railroad men, who, entering the service in youth, have developed with years and have found in merit the only path to advancement.

In the spring of 1861, Cassatt shouldered the rod of the under-surveyor and commenced the real work of his life. Between this date and 1870, when the office of general manager was created for him, he had constructed railroads, administered the management of the company's shops, and directed the construction of locomotives and cars, placed in working order new branch and connecting lines, and had supervised the operation of the entire system as general superintendent, compassing with ease the manifold and complex duties that appertain to so responsible a position. This was the creative period of the railroad's history. In order to build up a great highway of traffic between East and West, new lines were acquired, and in moulding these widely separated and ill-mated factors into one homogeneous system the best talent and the strongest administrative ability were required. Not only this, but the development of the company's interests from within received his closest attention. He bent his energies to acquiring adequate terminal facilities at important centres, reconstructed the roadway and bridges, introduced the track tank, and the block-signal system. He was the first prominent railroad official to recognize the far-reaching merits of the air-brake, and its introduction and exhaustive tests by him led to its universal adoption by the railroads of the world. To his efforts also is largely due the present well-established practice of maintaining a service of through cars between the large centres of population, although located on different lines of railroads.

The disciplinary regulation of employees received very close attention at his hands. Their appearance and their manners in their relation to the public were defined, and while Mr. Cassatt was firm and determined in his relations with the army of men under his control he was not dictatorial nor severe, and no official ever enjoyed in higher degree the confidence and respect of his subordinates. With equal facility the switch-tender or the superintendent could get a hearing if he had anything to say.

Mr. Cassatt's achievements as general manager won for him a vice-presidency, but in his enlarged field of labor he did not withdraw his watchful eye from the work of detail which had been taken up by others. With his magnificent work, as general manager as a background, promotion came quickly. In 1874 he became third and in 1880 first vice-president. In the latter position he was

second to and executive officer for his chief, the late president, George B. Roberts.

Great systems of railroads did not then exist, and the individual roads were being developed on lines of policy which prepared them to control eventually the weaker lines and assume the mastery in territories from which their traffic was drawn. The expansion was chiefly from within, except that a desirable connection was often drawn so closely under the protecting wing of the embryonic "trunk line" that its complete assimilation was only a matter of time. The greed of acquisition naturally excited many jealousies among the competing lines in the east, and in the delicate adjustment of these differences and the maintenance of harmonious relations with his neighbors, the diplomatic side of Mr. Cassatt's character stood out in bold relief. The promotion of the plans of his own management to secure the greatest advantages to their property was at the same time the first consideration in all his transactions. Like a general in the field he fortified his own position, while no opportunity to circumvent his enemy escaped him. He was as prompt to act as he was dashing in execution.

Another characteristic thing happened when, at the zenith of his power in the transportation world, after twenty-one years of strenuous upbuilding, he voluntarily surrendered his high post in 1882, and at the age of forty-two years retired to private life. In utter harmony with all his associates, with a grasp on the railroad situation of the country that no other man had hitherto enjoyed, and in the very flush of physical and mental energy, he sought relief to devote a few years of his best manhood to the pursuit of a leisure for the enjoyment of which he was thoroughly fitted by his tastes and environment.

In his letter of resignation, he wrote:

"My only object in taking this step is to have more time at my disposal than anyone occupying so responsible a position in railroad management can command. If I were to remain in active railroad life I could not desire a position more agreeable to me than the one I now occupy, nor would I be willing to connect myself with any other company than the one in whose service more than twenty-one years of my life have been passed."

His promise was kept in spite of the fact that numbers of tenders of the headship of railroads were made him during his retirement.

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Even in his retirement railroad affairs were not entirely banished from Mr. Cassatt's mind. He loved the work of the builder too well. A notable instance of his originality and bold determination is found in the planning and construction of the New York, Philadelphia & Norfolk Railroad. The problem of transporting promptly and quickly the vegetables and fruits of the Maryland and Virginia peninsula, and the eastern section of Virginia, had long been unsolved. The slow progress of conveying these perishable products by boat to Baltimore, or some small port on Chesapeake Bay and thence to the north by rail, was antiquated. Norfolk was naturally the forwarding point and quick railway service had to be established with that city, in order that Philadelphia, New York and Boston might enjoy the delicacies of the upper-south in the first blush of their ripeness. Railroad communication ended at Delmar just on the dividing line between Delaware and Maryland, ninety-five miles from Chesapeake Bay at Cape Charles.

Mr. Cassatt said to the late William L. Scott:

"Let's build a railroad from Delmar to Cape Charles, and connect with Norfolk and Portsmouth by boat."

"Very good," replied Mr. Scott, "But how will you transfer your freight across Chesapeake Bay expeditiously?"

"We will build powerful and fast transfer tugs that will transport loaded trains across the bay."

"But the distance is thirty-six miles and the bay at times is rougher than the English Channel."

"We can build the boats strong enough, and equip them with engines of sufficient power to make the run in three hours," calmly replied Mr. Cassatt.

This was the longest and most difficult ferry service that had ever been attempted, but with the boats constructed from Mr. Cassatt's designs it was accomplished, and the transfer ferry has been conveying in safety, and with promptness loaded trains across the bay for nearly twenty years.

The "Berry Express" has the right of way on this road, built out of the private funds of these two men, and the people of Philadelphia and New York may enjoy for breakfast fruit gathered in Virginia the previous afternoon, while the luncheons of Boston are enriched with vegetables gathered at the same time.

Since the successful operation of this ferry, the same system has been applied on the Great Lakes and the Trans-Siberian Railway will transfer its trains across Lake Baikal on the same principle.

On June 9, 1899, Mr. Cassatt was elected by the board of directors, president of the Pennsylvania Railroad to succeed Frank Thomson, deceased. He was not a candidate for the place and yielded his acceptance from a sense of duty to the corporation. He assumed the leadership at once and in an incredibly short period of time the railroad history of the country felt the impress of his powerful individuality.

Within six months the traditions of years were swept aside, and a new policy was adopted. The soft coal territory was dominated by the Pennsylvania by the right of geographical location, and the preservation of the integrity of this right was the aim of the new president. The community of interest plan was born, and under it the president acted. He purchased thousands of shares of the Chesapeake & Ohio, the Norfolk & Western, and the Baltimore & Ohio Railroads, and thus established a community of interest in the soft coal roads which at once served as a safeguard to the holdings of their stockholders and a protection to the public.

For the purpose of extending the tidewater facilities of the road a controlling interest in the Long Island Railroad, with its valuable dockage franchises, was secured, and the possession of ample shipping facilities were thus provided against all time.

In order to bind the traffic of the Great Lakes to the rail traffic of the interior the Erie & Western Transportation Company, with its valuable terminals at Buffalo, was taken over, and to fill in the gap between the Pennsylvania's own line and the great lake port the Western New York & Pennsylvania Railroad was absorbed and the Allegheny Valley Railroad consolidated with it for the purposes of operation.

And when these splendid properties had been gathered in, the Legislature was asked to authorize an increase of the capital stock of the Pennsylvania Railroad. It was done. The stockholders added one hundred millions of dollars to the capitalization, and in the meantime the stock of the company reached the highest market price in its history.

Measured by multiplicity of duties Mr. Cassatt may be termed a busy man. He is the president of seven companies and a director in twenty-three, including transportation, banks and trust companies. He works with wonderful rapidity and disposes of current affairs promptly and finally. His grasp of any proposition is immediate and forcible, and when it is disposed of there is nothing more to be said. But encompassed as he is with great affairs he does not deny himself ample recreation.

Apart from his deep interest in the breeding of horses, he is a friend of all true sports. He is a member of the New York Yacht Club, and under the colors of that organization has made a number of cruises in his yacht, *The Enterpr* foreign waters.

The Merion Cric the president, owe present prosperity He is an enthusiasti several hunt clubs country surrounding

Beside the soluti of transportation, c tration this busy p corporation has disc taining robust healt of body and mind i of the time free fron to out of door recrea and makes living an

THE MACHINERY OF WALL

AN EXPLANATION OF THE METHODS OF DOING BUSIN — JUST HOW A TRADE IN STOCK IS MADE — TH OF VARIOUS KINDS OF TRANSACTIONS — EXCHAN BROKERS, SPECULATORS AND THIEVES — THE WA COMMUNITY, ITS BUILDINGS, ITS NEW SERVIC PENSES AND ITS WHOLE MACHINERY OF RUSHING

BY

S. A. NELSON

STOCK speculation, now become national in scope, arrived at its maximum development during the months of April and May. Transactions on the Stock Exchange for a single day aggregated 3,330,000 shares, bank clearings on a single day reported a total of $598,537,409.64, and a Stock Exchange membership sold for $70,000 — all record-breaking figures. Brokers had to work day and night and Sundays. Bookkeepers fell asleep at their desks. Many broke down from overwork. Nervous prostration caused a half-dozen brokers to seek the medical care that could be obtained only in sanitariums. One great commission house found it impossible to close its office for one hour in the month of April. In the vernacular of the Street it was a "rampant bull market," with the whole country exhibiting stock-speculative intoxication.

This memorable boom culminated on May 9th, when the Northern Pacific "corner" turned the swing of prices produced a panic. $155,000,000 "corn that could have be $11,000,000 five yea

Then the fall. In speculation fortunes and lost in ninety mi hour speculative W declines of from $1 obliterated the marg equities of brokers banks. Fortunately was relatively as sha subsequent readjustm was accomplished in vious panics have re before the equilibri restored.

The activity in W dramatic culminatio election of Presider

had been responsible for a panic and an abnormal depression of prices. The rise, with occasional halts of prices attributable to the war with Spain, to excessive industrial corporation organization, and to the money scare of December, 1899, extended over four years. Its force was gathered from immense crops, vastly increased production of mines and manufactures, and an amazing growth of exports. With it all came the rehabilitation of the American railroad industry. The rise in industrial stocks, having been checked, was succeeded by a greater advance in railroad stocks. On the re-electon of Mr. McKinley the situation not only possessed all the good factors of 1896, but was reinforced by others, notably the elimination of Bryanism and the placing of the gold standard on a foundation safe from the attacks of demagogues. Not a cloud was to be seen on the trade horizon. Then followed a feverish outburst of speculation sweeping over the country with an unparalleled enthusiasm that almost broke down the machinery of Wall Street. England and Germany played active parts in the struggle, and the whole world looked on with amazement. And in all histories of Wall Street the dawn of the new century must be marked with a white stone.

SPECULATIVE WALL STREET

The Wall Street community is composed of the Stock, Produce, Cotton, Coffee and Consolidated Exchanges; the United States Sub-Treasury, Assay Office and Custom House; the New York Clearing House, a multitude of national and state banks, trust companies, private banking firms, import and export houses; dealers in commercial paper and promoters; representatives of railroad and industrial corporations and of vast private estates; the "Curb" market, and hundreds of corporation lawyers and others who have close relations with the securities markets. It is there that railroads and industrial corporations are organized, financed and reorganized if necessary; that stock and bond securities of all kinds find their level of value; that money can always be borrowed on good collaterals; that money is transferred from one side of the world to the other through the medium of foreign exchange bills; that gold exports or imports are arranged; that money seeks investment in government bonds and all other American and some foreign securities. And it is in Wall Street that fortunes are won and lost in stock speculation. Considered as a whole Wall Street is a true barometer of the country's financial condition, reflecting unerringly depression or prosperity. It is always forging a bit ahead of the times "discounting" known or expected factors, and sometimes upset by unexpected occurrences. True to American temperament, the stock market, considered alone, at times reflects an extravagant wave of optimism or an unjustifiable condition of pessimism, but as the money market is always a most reasonable place, normal conditions usually prevail.

Most interesting of all Wall Street's interests is the stock market. The Stock Exchange is an unincorporated, voluntary association, resembling in organization a club, and having a membership of 1,100. Memberships or seats fluctuate in value. A man to become a member must buy a seat and then pass an examination before the Committee of Admissions. If he fails of acceptance he must sell the membership. If he is accepted he, or his friends who lent the money used in buying the seat, must sign a paper releasing the membership from all claims. Should he become insolvent the membership is sold and the proceeds are divided among his Stock Exchange creditors. About 500 Stock Exchange firms, exclusive of individual brokers operating alone, transact the business of that institution.

The members of the Exchange may be subdivided into four groups: (1) commission houses which buy and sell stocks and bonds for the public; (2) "specialists," "floor" or "$2" brokers who execute orders for commission houses; (3) individual speculators who trade for their own account and risk and (4) brokers who lend money for banks. Commission houses may be divided into two groups: (1) those that conduct a home and many branch offices connected by private wires and (2) those that transact a local and mail business. Transactions in stocks or bonds are based on quick delivery. If you buy for "cash," delivery is made on the day of sale. While odd lots of stock are dealt in, 100 shares is generally recognized as the unit. The par or nominal value of one share of stock is usually $100, but there are "half" shares, so-called, where the par value is $50. Prices are based on a percentage of par or $100. In the quotations of stocks fractional

parts of one per cent. (which is also called one "point"), play a conspicuous part. The smallest fraction used is one-eighth or $12.50 on each 100 shares. Fluctuations cannot be smaller than one-eighth.

When bought or sold outright the share certificates are delivered to the buyer or by the seller after an exchange of checks representing market values plus commissions and other charges. Trading on a margin can be compared to a real estate transaction. Thus, if you buy a $10,000 house, mortgaging it for $8,000, and employing $2,000 of your own money, you have a $2,000 equity or margin in the house, or in other words twenty per cent. If you give your broker $2,000 or twenty per cent. margin he will buy for you 100 shares of stock, and having bought it, your equity in the stock is twenty per cent. If the stock advances and you sell out, your profit is the difference between the buying and selling prices, less brokerage. If the stock declines and you sell out, the difference represents your loss. Brokers charge a compulsory fee of $12.50 for each 100 shares bought or sold, or one-eighth of one per cent., and a two dollar revenue tax is added. Traders who carry stocks on a margin are usually charged six per cent. interest on the amount involved.

A complete trade on the "bull" or "long" side of the market is effected in this way. You deposit your margin of twenty per cent. with a broker and request him to buy at the market (the best price obtainable), 100 shares of Union Pacific. The order is telephoned to the Board and delivered to the floor member, who buys the lot for 100⅜ or $10,037.50. Adding your commission of one-fourth and two dollars for a revenue stamp the stock costs you $10,064.50. The next day the broker received the stock certificate from the man who sold it, and from the date of delivery you are charged interest, for the broker, if he does not use his own money for carrying it, borrows the cash from a bank and puts up the Union Pacific stock as collateral. In a week you elect to sell the stock at 110⅝, and your broker then obtains a check for $11,062.50, after having taken up the loan with the bank to secure a return of the stock which is delivered to the buyer. The profit would be $1,000 less interest. In the event of a decline, the difference between the buying and selling price as above figured would be your loss.

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shares of stock and sells 500 on the same day, instead of receiving and delivering them in transactions involving possibly eleven firms in all and the exchange of ten checks, he simply sends his statement to the Clearing House with a check for the difference that he owes or a draft for the balance due him on his trades. The fundamental purpose of the Clearing House is to enable each member to strike his balances precisely as if his dealings had been with a single other member. Members of the exchange are admitted to clear in their own names. Each member is assigned a number. Before 4:15 P. M., on every day except Saturday, when the time is 1:15 P. M., "receive" and "deliver" tickets are exchanged by the different firms, and each broker sends the tickets received with his statement to the Clearing House. The statement or sheet includes all trades in a large number of stocks, each separate security grouped together. All transactions are entered in one or two columns and a balance is struck. If the sheet shows a debit balance the difference is entered as a "balance" check, and the sheet must be accompanied by a check for the balance drawn on a Clearing House bank; if, on the other hand, a credit balance is due, a draft for the amount on the Clearing House bank is sent. The Clearing House system is complicated and yet simple, requiring the employment of a large staff of accountants. It deals with exchanges and balances. Brokers may buy and sell 500,000 shares of a single stock in a day. If the first seller can deliver to the last buyer, and eliminate the others in a "ringing out" process, a great saving in labor is accomplished. This the Clearing House does—the entire list of deliveries due is assigned in correct proportion to the items in the list of receipts due, so that the Clearing House books balance and every broker receives the stock to which he is entitled. Through the Clearing House the members of the Stock Exchange were able to avoid certifying checks calling for $9,537,000,000 in the years 1888–1899, since which time stock dealings have enormously increased.

THE ARBITRAGE TRADE

In the aggregate a small arbitrage trade is carried on between New York, Boston, Chicago and Philadelphia. Thus if Amalgamated Copper is selling at 125 in New York and 125½ in Boston, if it can be bought in New York and sold in Boston at the two prices named there is a profit of $50 on a trade of 100 shares, less charges. Such a business is transacted over private wires, and is a continual record of purchases and sales while frequent adjustments of the account are made possible by shipping stock certificates by express or registered mail so that the accounts can be evened up. Far more important and much more complicated is the arbitrage business between New York and London or Wall Street and Lombard Street. The first thing a broker asks when he gets down town in the morning is: "How is the London market?" London time is five hours ahead of New York, and therefore 9 A. M., here is 2 P. M. at London. At 9:15 Wall Street has received its first news from London in the form of the 2 o'clock quotations, together with other prices, notably of consols, silver, discounts, etc. Feeling the London pulse sometimes furnishes the guiding force for the local market, and some years ago it was a much more important influence than it is to-day. The arbitrage houses get to work early over the cable, figuring prices, reducing messages by the cable codes and sending instructions. The difference in prices between the two markets affords the arbitrageurs their margins of profit. Suppose a London broker bought 100 Union Pacific common at a certain price in London, and sold it for one-half of one per cent., or $50 more, through his New York correspondent. If it were intended to make a round trade and deliver the stock in New York, the certificate would be shipped by steamer and the expenses would be: (1) expenses of shipment; (2) loss of interest on the money employed while the stock is in transit, and (3) interest on the stock borrowed here pending the arrival of the London stock. These items would have to be deducted from the ½ point profit. This is the general method, with the result that the two markets are seldom wide apart, for, when they are, sales or purchases quickly cause them to come together. As the first New York prices arrive in London as late as 3 P. M., there is one hour remaining in that market, for the London Exchange does not close until 4 o'clock. However, trading in "Americans" continues on the curb abroad until 6:30 or even 7 o'clock. The arbitrage business is one calling for more skill than ordinary

brokerage, and it is a singular fact that most of the firms engaged in it are composed of men of foreign birth.

THE BANKS AND THE BROKERS

The banks and the brokers are closely related. Big brokerage houses at times employ three depositing banks, and they are constantly in the market borrowing money on stock and bond collaterals. Money is borrowed on "time," which signifies for a specified period, or on "call," which means that the money can be "called" back from the borrower whenever the lender desires or the borrower can return the money at his convenience. Assuming that a broker is carrying 1,000 shares of stock for his customers on a 20 per cent. margin. The market value of the stocks is $100,000. He requests a loan from a bank, and usually 20 or 30 per cent. margin (to be maintained at all times) is required, and so we will assume that the broker borrows $70,000 on the stocks at the prevailing rate of interest, usually under 6 per cent. To carry the stocks it will be observed that he has $70,000 of the bank's money and $20,000 of the customers' money, leaving $10,000 to be accounted for, and that is where he uses his own capital. If the stocks decline rapidly the bank requests the broker to "margin up" his loan, and in turn the broker requests the customer to "margin up" his trade. It is a delicate operation, and it will be noted that the broker is always riding on the crest of the price wave, balancing himself carefully from day to day.

"Time" money is usually cheaper than "call" money. It will be noted that the broker, as a rule, charges customers 6 per cent. interest for carrying stocks, and that he borrows for 3 or 4. Unless the customer be a very important one the broker will shave the difference, and this interest account is one of the broker's most profitable sources of revenue. When times are panicky, and money is "scarce" and high, the brokers have to borrow on the Stock Exchange or send to the banks, but when the market is dull and easy, and money is cheap, it is curious to see the money brokers calling at stock brokers' offices and almost begging them to borrow. Banks are also important to brokers in the matter of of over-certifications. Thus, a broker may have $100,000 in a bank, and during the day before 2.15 P.M. has to receive and pay for $200,000 worth o
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cities. Thus Buffalo, Cleveland, Toledo and other cities may be "on" a Chicago wire, and each pays a share for the service.

This is the most expensive part of a broker's business, for "wire" houses employ from one to fifteen telegraph operators, and they are the most expert of their craft and are usually paid $25 per week each. Speed and accuracy are the important considerations. An order to buy or sell on the New York Stock Exchange can be sent from Chicago and executed in four minutes. From Chicago quotations are sent at short intervals over the public wires to San Francisco, Seattle and other far western cities. One Chicago house is said to have traded in 300,000 shares of stock one day in May, which represented $33,750 in commissions.

STOCK QUOTATIONS

The Stock Exchange floor is divided into a seemingly confused but very orderly "crowd." Each crowd trades before a "post" holding an adjustable quotation board on which the last price is shown by a turn of the hand. The crowds are large or small, as the stock dealt in is a favorite or happens to be inactive. Sugar for example is a favorite, and ordinarily the "crowd" contains a large number of shouting, gesticulating brokers. In this crowd is a sharp-eyed, cold-blooded telegraph operator. He notes every sale on a pad with the eyes and the ears of an expert. As he gets the sales, he telegraphs each one to a central office near the Stock Exchange where they are rapidly relayed over the telegraph wire circuits connecting with the stock indicators or "tickers" as they are known. The ticker is a little mechanical printing machine enclosed in a glass case. It is an ingenious combination of wheels, steel springs, letters of the alphabet and numerals. Quotations are printed like this:

N P E

300, 156. 200, 156½. . . 200, 41.

Interpreted this means 300 Northern Pacific, common, sold at $156 a share, 200 sold at $156½ and 200 Erie at $41 a share. Each stock in order to hasten the delivery of quotations has an abbreviation, and these abbreviations lead to nicknames, such as "Mop" for Missouri Pacific, "Cheapest, Best and Quickest" for Chicago, Burlington & Quincy, "Post Office" for People's Gas, and many others. In the bull market the two quotation companies had to discontinue printing fractional lots and even then they were far behind time. On the day of the panic the tickers printed quotations eighteen minutes after three o'clock —the longest time on record. Ordinarily the printed sale follows the actual transaction in from two to five minutes.

HOW WALL STREET GETS THE NEWS

Wall Street has three news bureaus: those of Dow, Jones & Co., the New York News Bureau and the J. Arthur Joseph Bureau. The first two have elaborate systems for the distribution of news. They handle news more quickly than any newspaper and there is no place in the world where newspaper speed and accuracy have reached such a degree of perfection. Each news bureau has a staff of reporters, a telegraph and cable service, and each distributes the news printed on small sheets of paper, one using yellow and the other white slips. Messengers run with the slips to the brokers' offices. Each messenger has a route to serve and each service trys to outstrip the other. The result is that long before the afternoon papers appear, the brokers have read all the financial news and bulletins of the general news of the day from the "slips." The slips begin to be delivered at the broker's office at about nine o'clock. Opening with a review of the market, the London quotations and general financial and other news follow in quick succession, until at 3 o'clock in unending procession, slips have been received to the number of 100, 200 or more. In order to provide even greater speed each bureau maintains a page printing electric ticker service. For thirty dollars a month you get the news slips and a news ticker which prints the bulletins of the leading events before they can be delivered on the slips.

To illustrate how quickly the news is delivered, the last Chicago, Milwaukee & St. Paul dividend meeting can be recalled. There was doubt about the rate. The old rate was five per cent. a year; an advance to six was expected. Each news bureau had two men in the St. Paul office, 30 Broad Street, waiting for the adjournment of the directors. Each one of the four had secured control of a telephone and the wires were cleared to the home office of the news bureaus. In the meantime the bureaus had not been idle, each one had three sets of slips printed to meet each possible emergency.

One said: "St. Paul directors declared two and one-half per cent. dividend, the usual rate."

The second said: "St. Paul directors declared the usual dividend of two and one-half per cent. and an extra dividend of one-half per cent."

The third said: "St Paul directors declared a dividend of three per cent., an advance of one-half per cent."

All the slips were taken and distributed at various stations throughout the Wall Street district. Finally a man in the St. Paul office walked out and said: "The semi-annual dividend is three, an advance of one-half per cent!" There was a mad scramble for the telephones. Each news bureau received its bulletin one minute after the announcement. The operators of the page printers immediately clicked off the message eagerly awaited in every office. At the same time fast messengers were despatched to the relays of boys stationed at various points telling them to "cut loose" with Bulletin No. 3, and so the St. Paul dividend was in every Wall Street office a very few minutes after it was announced. Both news bureaus publish daily papers—the *Wall Street Journal* and the *Wall Street Summary*—and there are about a half dozen other financial papers, including the *Journal of Commerce*, *New York Commercial*, *Daily Stockholder* and *Wall Street News*.

Each daily paper in New York City supports a Wall Street staff of from two to six men. Wall Street depends for its printed statistics on the Financial Chronicle, Wall Street Journal and Poor's Manual, three American institutions that occupy important places in the machinery of a broker's office.

COST OF CONDUCTING A BROKERAGE FIRM

It is estimated that 300 representative commission houses pay expense bills that aggregate $15,000,000 a year. This, however, is only a part of the bill that the public pay for buying and selling stocks. The most expensively conducted firm in Wall Street was that of Price, McCormick & Co., which failed in 1899 with liabilities of $16,000,000, and the yearly expenses were figured at $1,000 a day or $300,000 a year. Employing about 200 men, and carrying on a most extensive wire and branch office business, it became insolvent owing to an abortive attempt of a member of the firm to effect a corner in cotton. This concern occupied thre
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market, "weak" succeeding "strong" days, the bucket shop men reap harvests. They always urge their customers to buy stocks and if they get a large following in any one stock they will not hesitate to enter the Stock Exchange market by sending legitimate orders to a broker to sell a certain stock down five points in order to "wipe out" the customers margins. Some of the more powerful have been known to secretly buy Stock Exchange seats for their representatives and use them for this purpose and also to "hedge" on their contracts. "Hedging" means that if a bucket shop is short say 5,000 shares on a rising market that amount will be bought on the regular exchange as insurance against loss. One of the biggest of the New York bucket shops not only lost all its capital in April but its owner had to mortgage his town and country houses. He was then forced to borrow on his note and had the rise continued a week longer he would have been insolvent, but the panic enabled him to clean up $250,000 on which he proposes to retire and seek rest in Europe. The field is a fertile one for adventurers and a dangerous one for the public, as nine out of ten bucket shop men will "welch" or refuse to pay if the market goes persistently against them.

THE CONSOLIDATED EXCHANGE

The Consolidated Exchange, called the "Little Board," is composed of quite a large membership of men who appeal to the "small fry" speculators. They trade on Stock Exchange quotations, and recognize that institution as the primary market. One of the mysteries of Wall Street is how they get the quotations which are posted on a 100-foot blackboard as soon, almost, as they are made by their big rival? But get them they do, and they transact a large business in fractional lots of ten shares and upwards. As there are ten persons who wish to trade in lots of ten shares where one wishes to trade in 100, this trade in the aggregate reaches large proportions. Then, too, although the Stock Exchange expressly forbids its members having business relations with members of the Consolidated, an active arbitrage business is conducted between the two boards, for prices are frequently one-half per cent. apart. The Consolidated Exchange has lost many clever brokers who sought a wider field in the big exchange.

ROGUES OF WALL STREET

The rogues of Wall Street flourish. They are thieving brokers, promoters of mining schemes and disreputable speculators. Said a thieving broker on one occasion: "If the Post Office Department would only let me alone I would have to hire a cart to carry down my money-laden mail. All you have to do is to appeal to the cupidity of the public. Promise 6 per cent. dividends on a first-class security, and you can't do business; but promise 56 per cent. on a fake, and I can get rich." Investigation proved his statement to be true. He is of the same class as the tipster fraud who advertises that he knows exactly which stocks will advance, and those that are going to decline.

For $5 a week, he will tell you precisely how to make a fortune. He advertises in strange ways using a ridiculous code. For example: "Hit Kangaroo for a jump of twenty points," etc. This interpreted means buy a certain stock for an advance of $20 a share. Such men are swindlers. Quite as contemptible is the man with a fake gold, silver, zinc, copper or oil mining scheme. He first buys a mining prospect for say $2,500, and then organizes a $500,000 or $1,000,000 company under the laws of New Jersey or West Virginia for say $2,500 more. The shares have an alleged par value of $1 each but he offers them for thirty-seven cents each from an elaborately furnished office where he poses as the fiscal agent. The rogue who selects the broker as his victim is more plentiful than the brokers are willing to confess.

THE MESSENGER SERVICE OF WALL STREET

Wall Street wheels would stop going round if all its messenger boys should ever go on strike. The total number must be 5,000 to 10,000. They are the brightest and quickest messenger boys on the face of the earth. "Hurry" is in the Wall Street atmosphere and they make haste with their work which calls for nimble wits and rapidity of physical action. The duties of the Wall Street boys are manifold; they compare stock transactions, make bank deposits, certify checks, transfer and deliver stocks, carry important orders, and they must be able to locate instantly 1,500 different offices in the Wall Street district.

BREAKING UP THE SOLI

WHY NATIONAL QUESTIONS ARE CAUSING A
OPINION—THE GROWTH OF INDUSTRY BREAKING
OF PROVINCIAL SOLIDITY—THE OUTLOOK FOR N

BY

SENATOR JOHN L. McLAUR

U. S. SENATOR FROM SOUTH CAROLINA

IN political sentiment the South is to-day in a transition state. From the close of the Civil War up to a recent period, the question of white supremacy was the paramount and absorbing one. The fear of Negro domination was the unifying factor in the Democratic party. This not only prevented any division of opinion on domestic or national issues, but it prevented anything like dissensions. So absorbing was the Negro question that the people were in fact oblivious to the great changes which were taking place in economic and industrial conditions in the South. White supremacy was the desideratum, and without this anything like the upbuilding of the material interests and prosperity of the South was considered utterly impossible. It is easy to understand, then, why there has been a "solid South," interested only in the most difficult domestic and political problem that any people ever faced, and why they have been so indifferent to national questions.

Happily for the South the Negro has been practically eliminated from politics, by the restriction of popular suffrage along the line of educational qualifications. The wisest leaders of the colored race have materially aided in this work by their sage advice to the Negroes to abstain from politics and to devote themselves to industrial and agricultural pursuits. There is a fast growing feeling now that all danger from Negro domination in the South is forever gone. This expectation and belief relieve the people from the necessity of uniting on one single question and disregarding all other issues, either state or national. They begin to feel that they can safely relegate to the rear the race issue, and exercise free thought and free speech on national politics, which vitally affect the material as well as the political interests of the South, and which promise such rich rewards.

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organized, with its hybrid principles and policy of obstruction, and would not like under any circumstances to forsake it or revise its creed. There is still another faction, which desires to rehabilitate the party along the line of progress, and its adaptation to the times and the changed conditions. Knowing that the Southern people are Democrats from heredity, association and environments, and feeling a reverence for the party's principles, its traditions and its past record, I do not think they will be inclined to destroy the Democratic party in order to build up another on its ruins.

What the result of this contest between these factions will be no man can divine at this time. But no man can close his eyes to the fact that the people of the South, by reason of this division of political opinion, are on the eve of a political revolution.

There is no greater menace to the stability of our government than a large minority in the American Congress voting upon broad, vital, non-partisan American questions from purely sectional considerations. I am a Democrat, honestly desirous of remaining so and witnessing the triumph of the party to which I am attached by association and heredity. It was never contemplated by the founders of that party that it should become a purely sectional affair, yet to-day there is no Democratic party capable of making itself felt outside of the South.

TREES AND CIVILIZATION

A BIRD'S-EYE VIEW OF OUR TIMBER AREAS —THE GOVERNMENT RESERVATIONS—OUR NATIONAL FORESTRY POLICY AND THE NEED OF A LESS WASTEFUL SYSTEM

BY

GIFFORD PINCHOT

FORESTER OF THE UNITED STATES DEPARTMENT OF AGRICULTURE

FOR nearly three centuries an increasing army has been chopping away at our forests. Yet more than one-third of the area of the United States is classed as woodland—over 1,000,000 square miles. Nor is it the oldest states which have the smallest forests. Of those which border the Atlantic, Delaware is the only one in which the wooded area forms as little as thirty-six per cent. of the entire state. The Gulf states, excluding Texas, are two-thirds wooded; the percentage varies from sixty-two (Louisiana) to seventy-four (Alabama). Even Texas has twenty-four per cent. of woodland. On the other hand, Iowa is only thirteen per cent. wooded, while in North and South Dakota the amount falls to one and three per cent.; Nebraska also has three per cent., and Kansas seven. These are the states of the treeless plains; as we approach the Rockies the timber increases again; no other states have as little as ten per cent. of their area wooded. On the Pacific coast is perhaps the heaviest and finest timber of the world. In a general way, the distribution of forests largely corresponds with that of the rainfall.

It is almost impossible to bring home to the average man the economic importance of this great national resource. The loss to the country by forest fires, largely preventable, has been estimated at $50,000,000 every year. In regions where wood and water are abundant the tendency is to take them for granted and forget all about them. But without cheap lumber our industrial development would have been seriously retarded. And agriculture demands water. All through great parts of the West the people are coming to see that on forestry and irrigation together depends their future prosperity. Vice-President Roosevelt has called this the greatest internal question of the day.

As the tide of settlement spread westward immediately before and after the Civil War, the settlers naturally occupied first the level lands wholly or in part devoid of timber, and

so easier to cultivate. Later waves of settlement rolled higher around the bases of the mountains, but left even to our time vast stretches of mountainous forests practically untouched. These are the areas which have been taken for national forest reserves. It was seen that upon their preservation depended, to a degree which we have perhaps not yet fully realized, the prosperity of the farming communities lower down. This was the main incentive for the creation of the national forest reserves, a movement begun under President Harrison, continued by President Cleveland, and still in progress of development under President McKinley.

These reserves have been made from the public lands still in the hands of the government. They number thirty-eight in all, and contain over 46,000,000 acres, or 72,000 square miles. Large as this total is, it is but a small part of the public domain still belonging to the nation. While the most valuable lands in every part of the country have of course been taken up by settlers, there still remains in all the states west of the 100th meridian a large percentage which has not become private property. In Nevada this reaches ninety-five per cent. of the total area of the state. The same reasons which have led to the creation of the present reserves will naturally lead to their extension to other unclaimed forest lands. But the reserves will ultimately rather increase than diminish the land available for settlement, for they will make productive many regions which are now worthless desert.

An Act of Congress, passed March 3, 1891, provided that the President "may from time to time set apart and reserve...any part of the public lands wholly or in part covered with timber or undergrowth," and that "the President shall, by public proclamation, declare the establishment of such reservations and the limits thereof." This clause President Harrison interpreted to be mandatory, an interpretation which succeeding Presidents continued to accept. Within less than thirty days of the passage of the Act he proclaimed the Yellowstone Park Timberland Reserve, containing 1,239,000 acres. One other reserve was made in 1891, and no less than fourteen in 1892 and 1893. The total area reserved under President Harrison was about 13,500,000 acres. President Cleveland's first addition to the list was the Cascade Range

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state in favor of forest preservation. California, more perhaps than any other state, had come to realize the intimate dependence of irrigation upon mountain forests, and was anxious to preserve the real source of its prosperity.

During the year of suspension, agitation brought about a better understanding and a wider conception of the importance of forest preservation. Throughout the West the newspapers gave increasing attention, with increasing intelligence, to the subject of forestry. So effective was the alteration of public sentiment that the attack on the reserves, renewed toward the end of the year of suspension, failed altogether, and in the Act of June 3, 1897, their threatened abolition was replaced by a comprehensive law for their management and protection. The proclamation of new reserves has been continued by President McKinley, and the total area within the forest reserve boundaries is now 46,828,449 acres.

Unfortunately the government does not own all the land within the reserves. Many of them cover areas within land grants of the great trans-continental railroads. The Northern Pacific Railroad was given the odd-numbered sections for forty miles on each side of its right of way, when the lands were not mineral. Large areas of the Bitter Root Reserve, in Montana and Idaho, lie within the land grant of this road. Nearly half of the San Francisco Forest Reserve, in Arizona, is within the land grant of the Atlantic & Pacific Road, now a part of the Santa Fe System. There are also within the boundaries of the reserves large numbers of claims which had been taken up by settlers, as agricultural or timber land, before the reserves were proclaimed. This was at first one of the sources of opposition in the West to the policy of setting aside reserves. Those who had established themselves within these areas with the expectation that the increasing settlement of the country would bring them neighbors, provide schools for their children, and give added value to their lands, suddenly found themselves isolated. A provision of law intended for their relief has resulted in serious losses to the government, though it has extended its holdings within the reserves. Settlers and others who owned lands or had initiated claims within forest reserves were permitted to exchange them for scrip, entitling them to an equal area of any unclaimed public lands. The consequence has been that large areas of burnt or cut-over lands have been ceded to the government in exchange for scrip of vastly greater value. All settlers have not taken advantage of this provision; nor was it desired that they should. Good farming land reserved for forest production means a loss of part of its utility. To devote good farming land to forest production would usually entail serious loss, and on the other hand settlers are needed in the forest reserves for their protection and use. Farm and forest must ultimately dovetail in the reserves as they do outside. In many cases, however, a readjustment of the boundary lines has already settled the difficulty to the advantage of both parties.

A third obstacle to complete government ownership within the reserves is the fact that they contain valuable mineral lands. The fear that mining development would be prohibited within their boundaries was the head and front of the attack on them after the proclamation of the Cleveland reserves. This was due to a misapprehension, for it is an established principle of forest policy that land of more value for agriculture or for mining than for forest uses should be employed for those purposes. The development of the mineral riches of the reserves is as earnestly desired by the friends of forestry as by the miners themselves. But the mineral land laws, which by the Act of June 3, 1897, were made applicable within the reserves exactly as without them, were drawn before reserves were thought of, and have sometimes been used as a pretext for securing title to timber lands in a way which has become a very serious menace to the reserve itself.

The relation between forestry and mining finds its best illustration in the Black Hills Reserve of South Dakota. Great mining enterprises, such as the Homestake Mine, of Lead, require annually vast supplies of cheap timber, if they are profitably to produce gold from their low-grade ores. The wood of the western yellow pine, the only important timber tree of the Black Hills, is used by them for mine timbers and for fuel. It has hitherto been cut with little or no care for its future production, and enormous quantities of it have been wasted. The Division of Forestry is just completing a working plan for conservative lumbering for this area, which, if carried

Photographed by T. P. Lukens

A BIT OF OPEN FOREST

In the San Bernardino Forest Reserve, California

into execution by trained men, will insure a continuous supply of timber for the future—a condition on which the prosperity of the mines must hereafter depend.

But the crucial problem to-day in the uses of the reserves is that of sheep grazing. It forced its way to public attention first in the Cascade Forest Reserves in Oregon, and in later years not only in Oregon, but also in Washington, California, Arizona, New Mexico, Utah and Wyoming, and it is less important than the timber question only in parts of Washington, Idaho, Montana, in the Black Hills Forest Reserve of South Dakota, in a single reserve in Arizona, and in Colorado, where the cattle question largely takes its place. To understand its importance it is necessary to remember that on the sheep industry often depends the prosperity of very considerable regions. The gross annual income from this source in eastern Washington amounts to $2,000,000, and about one-third of these sheep depend on the Rainier reserve for summer range. Out of the something less than 42,000,000 sheep in the United States in 1900, over 19,000,000 were in the Rocky Mountain region, and over 5,000,000 more in the Pacific states, worth in all about $68,500,000. In many parts of the West sheep grazing is the chief industry. Herds of from 2,000 to 3,000 head are common, and the business—a highly lucrative one—has a very considerable political importance.

RUINS OF A YOUNG SPRUCE FOREST

Recently burned in the Black Mesa Forest Reserve, Arizona. No reproduction has yet taken piace

ALPINE HEMLOCK
In the Cascade Pass, Washington Forest Reserve, Washington

It is well known that grazing under some circumstances results in serious injury to the forest. It destroys the young growth on which the renewal of the forest depends, sometimes packs the soil hard, and sometimes, on mountain slopes, cuts the sod and root-fibres which hold the earth in place. Prolonged over-grazing is fatal not merely to the future of the forest, but, what is of more importance, to its value as a water conserver at the present time. Hence in some parts of the West there has developed a sharp conflict of interests between the communities which depend on reserves for grazing land and the agricultural population of the valleys dependent on them for their water supply.

The investigations of the Division of Forestry establish two things. First, that in certain reserves (including all of those in California) sheep-grazing should be prohibited altogether. Secondly, that in the majority of the reserves limited sheep grazing may, with suitable regulations, be carried on with entire safety to the forest. Such reserves are those

Photographed by C. S. Crandall

LODGEPOLE PINE
Logs cut and left in a Colorado forest, furnishing material for a destructive fire

of Arizona, New Mexico, Oregon and Washington east of the summit of the Cascades. In such localities it is purely a question of degree. The finest reproduction of the western yellow pine I have ever seen was on a sheep range in Arizona which had been judiciously grazed for over twenty years without a break. On the other hand, as complete desolation as it has ever been my misfortune to look upon I have seen in the same region on an area once famous for the stand of grass. Over-grazing was the sufficient cause. Unrestricted sheep-grazing has this single mitigating character—it destroys itself. The permanency of the grazing industry in the forest

HEAVY GROWTH IN A RIVER-BOTTOM
With sparse growth on the arid, granite slopes beyond. Valley of the Stehekin River, Washington Forest Reserve, Washington

reserves depends altogether on its wise and effective regulation by the government.

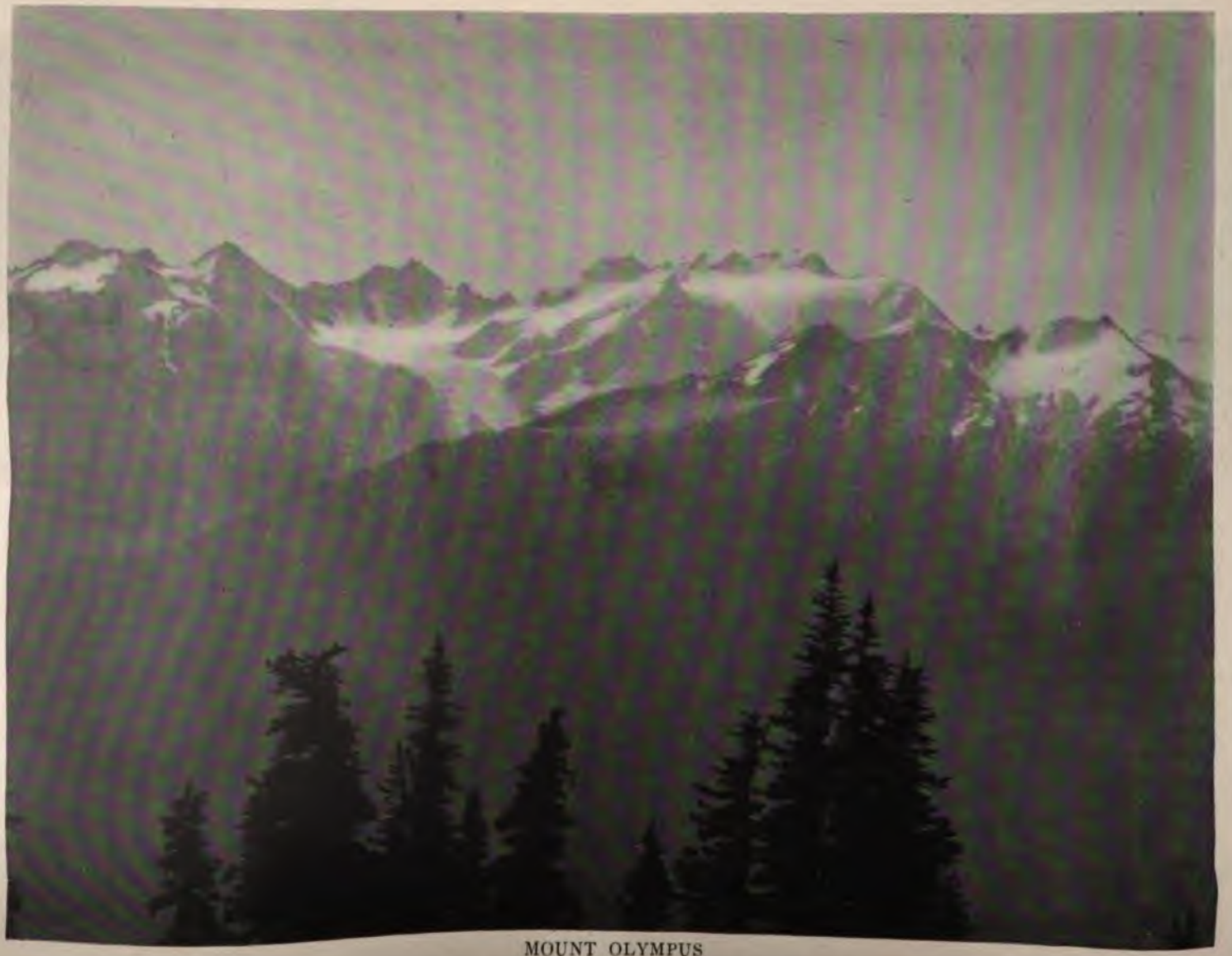
The most important of all the functions of the reserves is their yield of water. In the first place the forests with which they are covered, however much or little they may affect the rainfall itself, have a most powerful influence upon the distribution of it after it has fallen. The regulation of streamflow by the forest makes a double saving. Just as a chain is only as strong as its weakest link, so

THROUGH THE DENSE FOREST
Chiefly of red firs and hemlocks, in the Mt. Rainier Forest Reserve, one of the most productive forest areas in the United States

a stream may be valuable for water-power or irrigation only to the extent of its lowest flow. By holding back the flood waters and adding them to the low water discharge, the forest increases doubly the supply which can be depended on for economic purposes.

Photographed by C. S. Crandall

A FOREST DEVASTATED BY FIRE
Near Long's Peak, Colorado. Burned in 1900



MOUNT OLYMPUS

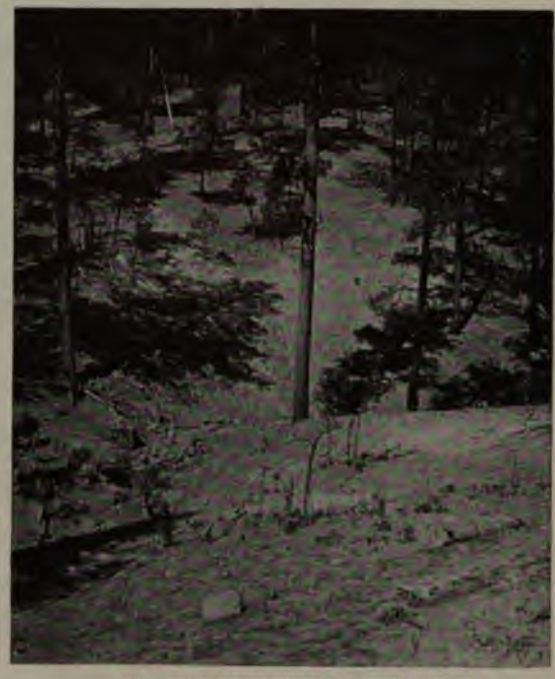
In the Olympic Forest Reserve, Washington, one of the least known regions in the United States

Agriculture in the West must be developed largely through a system of storage reservoirs. Such reservoirs fail either through the giving way of the dams—a remediable calamity—or through the filling up of the reservoir with silt—a misfortune of a totally different kind. Storage reservoirs whose drainage areas are not protected by forests stand in the greatest danger from this source. Silt is the chief foe to irrigation, and the only remedy is the forest.

A HERD OF EWES AND LAMBS
Yellow pine forest, Black Mesa Forest Reserve, Arizona

ON THE SHEEP-TRAIL
Sierra Forest Reserve, California. Showing the destruction a herd can work in the forests

While sentiment in favor of forest protection first developed in the East, the West is the part of the country now most awake to the importance of maintaining and extending the system of governmental forestry. This is because the prosperity and economic development of great regions are bound up with the cause of forest preservation. There are



GROUND TRAMPLED BY SHEEP
Showing how the young growth has been destroyed. Gila River Forest Reserve, New Mexico

in this country from seventy to one hundred million acres of land not yet under cultivation

Photographed by E. T. Allen

A NEW FOREST
Where trees are springing up in the track of a fire. Mt. Rainier Forest Reserve, Washington

Photographed by C. S. Crandall

A SEED TREE AND YOUNG GROWTH

Medicine Bow Mts., Colorado

Photographed by E. T. Allen

LOFTY RED FIRS

About ninety-five years old, growing on land once cleared by fire, Mt. Rainier Forest Reserve

which are reclaimable by means of irrigation. This means an increase of at least twenty million souls, and probably more, in the possible population of the country. But permanently successful irrigation involves and demands the preservation of the forests. All the Southern California fruit region depends on the water supplied by the southern California reserves. Phœnix, Arizona, the center of Salt River Valley, was a few years ago a sagebrush desert. It has now 35,000 inhabitants, with an assessed property valuation of ten million dollars. All this is due to water, which, brought in canals from streams fed mainly from the San Francisco and other Arizona reserves, has turned the desert into a fertile valley covered with ranches and dotted with small towns. Fruit goes from this region to California and ripens a month earlier than that of the latter state. This is only a single example of what irrigation may do, and of the indefinite possibilities of economic service in the government forest reserves.

There are two measures of policy of vital importance in the West: the extension of the forest reserve system to cover areas whose preservation is essential for any of the reasons I have already noted, and the consolidation of the government forest work under a single bureau. This is now distributed among three unrelated bodies—the General Land Office, which is charged with their administration, the United States Geological Survey, to which falls the duty of mapping and describing them, and the Division of Forestry of the United States Department of Agriculture, which is called upon to investigate questions of a scientific and technical nature. The present system is wasteful, unbusinesslike, and in many ways unsatisfactory. In the list of the objections which may be urged against it is this—that it effectually prevents the organization of a government forest service under trained men, and consequently the application of expert skill to forest problems of the greatest delicacy and importance throughout our western country. The time for conservative forestry has fully arrived. The men are being trained in the various forest schools. It only remains to bring the work and the men together.

SPRUCE AT TIMBER LINE
Black Mesa Forest Reserve, Arizona

Photographed by C. S. Crandall

HOW A FOREST REPRODUCES ITSELF
The tall spruce tree to the right is the sole survivor of an old fire. It furnished the seed for the young growth around it

JAMES R. KEENE, MANIPULATOR

THE METHODS AND PERSONALITY OF MR. KEENE; AND THE LIGHT HIS RECORD THROWS ON WALL STREET

BY

EDWIN LE FEVRE

THE name of James R. Keene conjures in the popular mind visions of the struggles in the Stock Exchange which result in the winning or in the losing of millions. That Mr. Keene is a great "plunger," that he is in fact, the leader in the stock market, is well known to newspaper readers. The average Wall Street man with an enthusiasm born of profound convictions is forever telling the average outsider that Mr. Keene is the greatest "manipulator" of stocks that ever lived. And it is as a manipulator of stocks that Mr. Keene will be remembered longest. He has never sought to become identified with the management of the companies whose stocks he has bought and sold by the hundreds of thousands of shares. Because of this disinclination to up-build or to "water" or to consolidate companies, he has been regarded as an impulsive, reckless stock trader who has found in the Stock Exchange a kind of adventure with "the limit to the sky." His plain speech has often been exaggerated and misinterpreted; but he has a remarkable record as a Wall Street leader who has always given his opinions with absolute candor, whenever he has felt that his views were of public interest. "Bull" statements by him have inaugurated "bull" markets just as "bear" interviews with him have marked the end of booms.

His career has been of extraordinary interest. He went to California in the '50's—a frail boy of twelve whose health had been impaired by overstudy. At fifteen he had a man's mind and was a "hustler." He became a miner, a farmer, a cowboy, a government "mule-puncher," a newspaper reporter and proprietor and a mining man on the Comstock Lode. From Virginia City he took $10,000 to San Francisco; he ran it up to $150,000 in a few months, speculating in mining stocks; and he lost it all and more too. After two years of privations and penury, he arranged with his creditors to be allowed to join the Mining Exchange and soon he became the leading mining stock broker in San Francisco and a millionaire. They still tell many stories of him on the coast, for he had for associates, when he was president of the Mining Exchange, the big mining millionaires.

In 1876 he came East, but not to "bust" Jay Gould, as tradition has it. He had $6,000,000 and was on his way to Europe for his health; but what he saw on his trip across the country made him a "bear" on railroad stocks and he sold "short" 10,000 shares of New York Central at $110 a share, which some time later he bought at below $90 a share, clearing about $200,000 by that deal—his first on the New York Stock Exchange. He abandoned his European trip and stuck to Wall Street. He became a "bull" that summer and bought huge amounts of low priced railroad stocks. It was not a mere gamble; he had read conditions and discerned what the future would inevitably bring to the country. To him it brought $9,000,000 in two years.

Against his own judgment he was persuaded by Rufus Hatch to buy 1,000,000 bushels of wheat. Little by little, circumstances led him to join a pool formed to control the Chicago market but his associates one after another abandoned him and he endeavored, single-handed, to carry out the campaign. His brokers played him false, friends proved traitors or pleaded "the baby act," as losing gamblers sometimes will, and he was forced to relinquish his lines of railroad stocks which he had carried in expectation of a big advance. He lost $7,500,000 and he has said that if he had kept out of wheat he would have made $10,000,000 out of his other "deals;" and that he would not have lost his entire fortune later, little by little—$1,000,000 in the Hannibal & St. Joe "corner," and other reverses until he was not only penniless but $1,500,000 in debt, some fifteen years ago.

A veteran of the Street said to the writer a few days ago, while discussing Mr. Keene's wonderful work in United States Steel: "My views on Keene are not shared by the Street generally. I have no liking for him as an "operator," but I have the greatest admiration for him as a man. My liking dates from his dark days. It was after he failed. There was a man who was used to the best in the land, lavish by nature, fond of the good things of life, accustomed to the flattery of lesser speculators, loving above everything to back his views in the market with millions, to whom operating in stocks was as the breath of his nostrils, a man proud by instinct, a bundle of nerves, impatient of obstacles—now flat "broke." Once so powerful and courted and feared, now unnoticed, unsought, regarded by the Street as an exploded bubble about to join the ranks of the vast army of Wall Street failures. What did he do? I used to see him going to and from his little cottage in the country every day because he was, like myself, too poor to live in the city. I was poor too, but I could still afford to have my wife's phaeton meet me at the station. Not so with Keene. He walked from the station to his house. I have seen him in the dead of winter struggling through the snow-drifts, with his head lowered and his body bent, walking against the wind, a dismal figure in the chill landscape. How many men would have survived the sudden descent from millions to pennies? If the New Street saloons are full of men who once swung big lines of stock and now gaze on the saloon ticker with blear eyes and handle the tape with trembling fingers, why should not have Keene, that bundle of nerves, sought consolation there, or gone to ruin in some other way or given up the fight? No. He bent his head when the storm raged and pushed onward, and twenty years later he was the admired and envied and feared king of the stock market. That's why I like the man."

Mr. Keene owes his rehabilitation to his remarkable abilities as a manipulator. As a mere speculator, working for himself, he would have been obliged to operate on an insignificant scale by reason of lack of capital, and the recovery of his lost millions would have been a slow process. But capitalists and promoters associated themselves with the greatest of manipulators, and he created a market for securities which had hitherto been unvendible. He was soon the possessor of enough millions to insure respect for his market opinions and he became again a leader. To-day he is the general-in-chief.

The mental characteristics of the successful stock-market leaders are the characteristics of great generals. Mr. Keene has uncommon foresight, lightning rapidity of perception and grasp of the essential facts, and unerring judgment of the capacities of the opposing forces and of men in general. He sees that he must achieve certain results, and he discovers undreamt-of ways of doing so. He is not a stock gambler. He does not bet on fluctuations, but he makes them. What he does bet on is on the correctness of his judgment of general and of stock-market conditions; that is, he risks his dollars, as Grant risked his soldiers' lives. He has always had for an ally—the only ally that he could trust—natural conditions. Again and again he has had arrayed against him an overwhelming combination of millions wielded by adroit and unfriendly men, and it has looked as if nothing could save him from financial death. But he has bided his time, and in the end he has seen the ramparts of dollars erected by his enemies crumble away beneath his blows—at a very fair profit to himself.

He is highly nervous but he has the great knack of patience, so that he can plan like Von Moltke and lead a charge like Phil Sheridan. He must produce certain effects by means of price-fluctuations, and he knows how to do it. Thus, on the day after the publication of Mr. Cleveland's Venezuelan message he not only sold out a big line of stocks that he was carrying, but in addition he sold short over 50,000 shares in which he made a "nice turn," as he called it. He does not know what fear is. He has, at times, been so heavily committed that any untoward event tending to upset the market would have made him lose five millions in five minutes. But he lost no sleep over it. And he has planned and carried on a half-dozen campaigns in single stocks each of which has netted him a million or more after a few weeks' work.

To most men, even famous stock operators, the tape merely conveys an idea of how the market is "going." But to Mr. Keene the tape reports just how his lieutenants are executing his commands. Those who know what he has done see in the immobile figure by the ticker the embodied soul of the stock market. Pausing only to give fresh orders

which are transmitted to his brokers, he resumes his scrutiny of the tape. On dull days he is as restless as a caged tiger, pacing to and fro, sitting for a second, rising, glancing at the ticker from mere force of habit.

The manipulation of stocks is an art, as war is an art. Manipulators differ in their methods as do generals. Mr. Morgan, for example, can consolidate vast properties and reorganize railway systems and put out new securities by the hundreds of millions. The prestige of his name as a banker enables him to sell bonds to investors; but he has not always succeeded in creating a good market for stocks, for money is not everything, just as superiority of numerical force does not always mean victory in a battle. Mr. Keene knows how to buy and how to sell stocks as no other man. He joins to a vast experience at the game a knowledge of the psychology of stock gamblers and a variety of resources that enables him to change his plan of battle. His boldness is his most striking feature as a manipulator. He takes a stock which he believes to be worth more than it is selling for but which has not been properly cared for in the market, and he advances it until people are eager to buy it.

Take the case of the Southern Railway. Since the reorganization of the company the stock had been more or less neglected. Other shares had risen but the Southern Railway stocks had not. Efforts had been made to create a market for it, but, although the prices advanced, the rise was not proportionately nearly as great as that in other and less meritorious securities. Every time the price rose men who held large interests had so much for sale that the price promptly settled back. Speculators would buy and wait patiently for a further rise; they would become disappointed and finally sell out in disgust. Mr. Keene interested himself in the stocks. He bought at first carefully, in order to secure it cheap, but later with apparent recklessness. All the stock that the weary holders were glad to sell he was glad to buy and the price rose steadily. Mr. Keene, of course, sold as well as bought. He says that to sell 20,000 shares you must buy 100,000. That is, some of his brokers would buy 100,000 shares while other brokers would sell for him 20,000. And, before many weeks had passed Wall Street was willing to buy Southern Railway stocks freely, though the price was twenty points higher than when the stocks were unpopular with investo
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A DAY'S WORK OF A STOCK BROKER

BY

ARTHUR GOODRICH

FOR some minutes back—hours it seemed, for minutes grow into hours in dreams—he had been in the whirl of a panic market, with the carefully laid foundation of years trembling beneath him, with a rush of wounded customers crying and swearing in a breath, with the drawn faces of his clerks about him awaiting orders. Things were all slipping away from him and he was powerless to stop them, while through the confusion he heard the monotonous, heartless click-click of the ticker, telling its story of melting millions, and the endless ringing of the telephone bell. He awoke with a start and looked wonderingly about the room. It was his own little snug bachelor apartment, and there wasn't any panic after all. The ticker was only the little French clock Emily had given him, and the telephone—ah, the telephone was real, for it was ringing merrily in the next room. It took only a second to hurdle a chair or two which stood in the way and to take down the receiver.

"Hello"—"Yes"—"Oh, it's Mr. Jenkins."

"Closed last night at 72—"

"Yes, I think so—"

"All right, sir. And, by the way, Mr. Jenkins, call up my office about nine, and register that order, will you?"

"Good-by."

"Jenkins begins business early," he said.

The Broker breakfasted hurriedly, and he was soon going at a brisk pace down to the avenue, where he most wonderfully found a seat in a down-town elevated car.

Wall Street's nerves were already beginning to tingle in preparation for the day's sensations when he reached it, and a large number of men—the men to whom "the street" is business rather than adventure—as well as clerks and boys, were busy making ready the day's routine. It took only a few minutes to get the firm's securities from the Safe Deposit Company.

His partner was already in the office when he reached it, and from the inner rooms came the healthy hum of work.

"It looks like a pretty full day, Jack," was his greeting from his partner.

"Anything startling in the London quotations?" he asked.

"No—market's irregular. A & B is down a shade along with two or three others, but nothing of importance."

He glanced quickly over the mail and the London quotations, while Richards, his partner, and the confidential clerk were having the orders properly entered on the order slate.

"Richards, something's going to happen to A & B to-day."

"I think so," and Richards went on with his work.

"Get Mr. Lyle at the 'phone, Jennings."

A minute later, the Broker was talking with his customer and advising him to let them sell his block of A & B at the opening.

"All right," he said to Richards as he turned from the telephone.

And then the talk ran into discussion of loans and marginal accounts until an early customer or two dropped in, and Richards—for it was nearly half-past nine—started for the Exchange. Even while his callers were talking about the prospects in certain stocks, the Broker was giving a more careful scrutiny to the loan and marginal accounts. A number of habitues of the office drifted in one by one. In the meantime the telephone bell had commenced ringing, and an order or two for the opening, along with a number of inquiries, had come on the wire from men at home, office or club, unable or unwilling to journey to the scene of action. The men in the office were talking with a nervous self-consciousness. It was like a number of high-strung thoroughbreds at the starting-post. Suddenly a metallic click came from the tickers, and the race was on.

"Opens strong," came from a group by a ticker, and then began the monotonous reading of the tape. The Broker listened with growing interest, occasionally going to the instrument to watch the progress at the start. Through all the talk directed to him by the

men about him, asking advice, giving whispered tips, even when at the 'phone he heard each change in the market, watched each fluctuation and, as the minutes passed, grew more and more engrossed with the fascinating game. And he saw quickly that at least two stocks, A & B, as he had thought, and XY had been singled out by the "bears." Orders were coming in rapidly. It was a full day already and the Exchange open only a half-hour.

"That ticker's a funny music-box" remarked a thin, mustached, genteel-looking gentleman, the collar of whose light overcoat was turned up tightly about his throat. "One minute it's playing a waltz that would thrill you and the next it's playing a dirge, and then again it's rag-time."

"You ought to have been around last week, Colonel," said a nervous stoop-shouldered man who looked fifty and was thirty-five. He had been a successful surgeon until three years ago, but he could count his patients on his fingers now, for he hadn't been able to cure himself of the Wall Street fever once it was on him. "It was click-click—then they'd forget to wind her up for five minutes—then another click-click, and so on day in and day out. Why, I'd dropped a thousand or two gladly any time if it would only have tuned up."

"By the way, Doctor, have you been up to the Casino lately?" said a comely young fellow who had just joined the group. "Catchiest music I've heard this year."

And the talk drifted to a favorite actress, to the last horse race, to trout fishing and what not. They were brought back to Wall Street by a large man who stood by a ticker.

"Funny, ain't it?" remarked the man, who wore an ostentatious diamond pin and was supposed to handle a large business uptown. "Two weeks ago I'd bought any amount of XY—almost been willing to commit larceny to get the money. Don't know why I didn't. Ever since it's been dropping, and now look where it is."

The Broker had gone over to the ticker while they were talking, and stood smoking rapidly, then he turned slowly away and called one of his clerks. The crowd about the instrument grew more excited as the stock was pushed down point by point. The Broker could hear the confused babel as he took down the receiver to talk with Leonard. He must have more margin on Leonard's block of XY. It was the fourth t
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Then he called Jennings quickly.

"What do you suppose Mr. Richards meant by both buying 1,000 National Gas, Jennings, and selling another 1,000?" he asked.

"Can't imagine, sir, unless he got Mr. White's order to buy confused."

The Broker went to the outer room again. Steel had dropped a point, but the quiet man had gone. His operations were over for the day. To-morrow morning he would come in and say, "Buy this," and go out to the golf links in the afternoon. The Colonel confided to the Broker that he was going to buy some Northern to-morrow if he could borrow the money, and went out for lunch. The crowd thinned slightly. A young girl came in with some tickets for a charity entertainment, and the Broker bought four with a grace born of long experience.

There was a protracted stir at the tickers, for A & B was slumping rapidly, and the Broker, deciding that the men were busy enough without him, called this cashier and made inquiries about the renewals of several time loans and the withdrawal and substitution of certain securities from the old loans. After the cashier had left him he rang up his money broker to get the prevailing rates.

"Gentleman to see you, sir," said a boy a minute later.

"Bring him in, Jimmy."

It was a man of his own age, carefully dressed, who entered and sat down without speaking. The broker turned methodically from his memoranda.

"Well, sir." Then, as he saw his visitor, "Why, Fred; what are you doing down here?"

"Oh, just worrying for a living instead of working for it, that's all. Can you lend me a little money, Jack?"

"Of course, I can, my dear fellow. If you need money it's yours for the asking."

"Five thousand?"

"I guess so."

"All right Buy M & R with it for me."

For answer the Broker called a clerk.

"Thank you, old man. I'll be in later." And Fred was gone.

At the door he passed Mr. Smith, the representative of a string of banks, who some days loaned $30,000,000 and more. This gentleman with great formality quoted the Broker a rate of three per cent., and retired.

Jennings was at the Broker's elbow as he turned.

"National Gas is down two points."

"All right; I'll watch it."

Slowly National Gas went down, and while a number of his customers thought they were occupying his time, the Broker watched every change. Finally he disappeared and sent a message to Richards to "cover" the short 1,000 shares. National Gas had dropped six points, which meant a profit of $6,000 on stock they had not meant to sell. Then there was a quick boom in Northern, a rapid fire of telephonic messages to and from the floor, and another fair profit in commissions.

"National Gas is rallying," said the Doctor from the ticker, and the Broker smiled. He had waited just long enough.

"It always pays to buy where you have lost," said a pompous man of the "self-made" variety. "In all my long experience I never had it fail. It's the secret of my success. Now, I lost on—" But the Broker having heard the story many times before slipped away to have a look at the reports. He was interrupted by a pale-faced, refined looking little man, who entered without being announced.

"Hello, Miles," he said, and there was a quiet elation in his voice. "Have you watched M & R to-day?"

"What is it now?"

"74."

"Fine! It shows what grit will do. If you had weakened and sold when it dropped, think where you would have been. And now —why, you bought at 72¼. What are you going to do with it?"

"Hold it, I think."

Here the Broker was interrupted with an inquiry from his private wire correspondent at Newport, and his visitor left him. After a talk with Jennings he asked his Montreal correspondent for more margin on his increasing line of stocks and in a few minutes they had wired that Miles and Richards could draw on the Bank of Montreal for $20,000.

He was scarcely through when Jennings hurried in.

"Mr. White ordered to sell his National Gas, sir. It's two points above the opening. Going to finish strong. Just heard from Mr. Richards that he had sold it."

The Broker smiled. "Wish we could make

mistakes like that every day, Jennings," and he turned toward the customer's room. A few were still watching the last moves of the market. The Broker was fingering the tape when he felt a hand on his shoulder. "Back again, Fred?" he said.

"Yes, thank you. Sell out your $5,000 worth, Jack. It's up four points."

"So I saw, but I was waiting for orders," smilingly.

"I'll be in in the morning. Good night." There was a hearty hand-grasp, and Fred was gone without a word.

And the few that remained followed almost on his heels, for the Exchange was closed. And of the number no spectator could have said "He lost to-day" or "He won." The Colonel was joking the Doctor about the latter's bull-pup. He didn't know that the Doctor had done well that afternoon in M & R, nor did the Doctor, as he retorted, imagine that the Colonel had been a fairly heavy loser in Pacific. The Broker knew for he was their father-confessor—no one else. The Broker slipped out for a hurried lunch—it was his first opportunity—and was back gathering the day's threads together when Richards came in
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MR. WINSTON CHURCHILL
CRISIS"

THE day of neglecting new writers has quite gone by. There is even more rejoicing over the appearance of a new novelist than there is welcome for the work of the author whose reputation has been sustained through a dozen successive volumes. Take, for instance, "The Celebrity," with which Winston Churchill launched his career. An extremely clever and diverting story in quite a new vein—a Hoyt farce comedy in good prose—its humor and brightness found ready and quick appreciation. The arrival of a new writer was heralded with generous predictions of a future of note.

Mr. Churchill might have taken advantage of the fame that his first venture had won to put forth a second work as soon as possible, but he was too wise. He resigned his editorial post on *The Cosmopolitan* magazine and went to live in St.
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And who is Mr. Churchill? A frank, fine character, with an individuality of his own. Left an orphan at an early age, he grew up in St. Louis under the tutelage of kindly relations to whom his future was a matter of some anxiety. A self-contained, rather self-willed youngster, he made up his mind to go to college, and he rejected the excellent chance of a career with a drug company which was offered him. It seemed flying in the face of Providence that such an opportunity should be thrown away by a youngster who had his fortune to make, but he was firm against expostulation; and the next thing that happened was that he obtained an appointment to the United States Naval Academy. He was not what is known as a brilliant student, but he showed persistence, judgment, and method. His excellent standing in his class entitled him to the hope of a successful naval career. But he again disappointed his kinspeople by resigning from the service and securing a place as assistant editor of the *Army and Navy Journal*. He went to work at journalism, and did so well that his new choice seemed to justify his course. He next secured an engagement on *The Cosmopolitan*. As in all other things that he has undertaken, he was successful at this task; and it was during his editorial service that "The Celebrity" was published. Then he gave up his editorial work as he had before given up his post in the navy and his opportunity in business. He had meant to write, and write he now would. At Annapolis he had conceived the idea of the novel that became "Richard Carvel," which was at first written as a short story; and during the years of his editing he was gathering the material which gave historic setting to that novel. He returned to St. Louis and married. Such, briefly, is Mr. Churchill's biography.

There could be no better scene for a story of the Civil War than St. Louis. In location and tradition southern, yet with a large population drawn from New England and the West, a greater intensity of feeling was aroused there perhaps than in any other city in the country. The conflict, its issues, its personalities form the web of "The Crisis." Hero and heroine are on opposing sides, the characters grouped about them represent phases of the struggle. Lincoln is portrayed in a very human guise; there is a clever sketch of General Sherman, which is a vivid and credible portrait. General Grant appears in silhouette, first in the humble guise of a wood dealer, later as the great leader of armies. Fremont is a humorous picture.

Yet with all the feeling and spectacle of war, with all the play of divergent opinion, of passionate partisanship, "The Crisis" is a love story. The primal interest is in the two characters, the beautiful Virginia Carvel, the high-bred, high spirited Southern girl, and Stephen Brice the fine, serious young Bostonian, representing the best type of those who opposed slavery. It may be objected that the author enforces his intention of ultimate union between these interesting young people in rather too arbitrary a fashion. Their fate is obvious from the very start; yet there is introduced a pleasing show of opposition by the passionate wooing of Clarence Colfax, whose rôle is that of the Southern dandy become a real hero in war time. But it is a case of love at first sight between the hero and the heroine, not confessed indeed, for the girl struggles against fate and evinces a pseudo hostility to the "Yankee," whose fine character and noble person she is obliged to admire. The graces are all theirs—they have physical, moral and intellectual charm, for Mr. Churchill does not deal with commonplace heroes and heroines.

Herein, undoubtedly, is the defect of "The Crisis" and the quality which will win its popularity. The unalloyed loveliness of both hero and heroine, detracts from the workmanship of the story. Here is a moving picture of a national conflagration, several very dramatic scenes—here is a convincing portrait of Lincoln at one of his great moments, and a group of well drawn figures from the city's life—yet because of the unmitigated idealization of the two central figures, the reader becomes a trifle weary, or at least a trifle incredulous. But the story is interesting. The progress of its events carries one along with delightful rapidity. The side characters—the fine old Colonel Carvel, the surly but noble Judge Whipple, Brinsmade, Captain Liege—are as pleasant a set of folk as we have had from any novelist for a long time. How much more desirable as real acquaintances are they for instance, than the virile, passionate and intensely human group of San Joaquin ranchers that Mr. Frank Norris uses in "The Octopus." But "The Octopus" is blood and iron, and "The Crisis" is a delectable water color.

A SHORT GUIDE TO NEW

Mr. CHARLES K. LUSH, whose "The Federal Judge," a successful novel of a few years ago, is pleasantly recalled, again finds in the very practical working world of American politics a novel and interesting field for fiction. He strengthens his hold upon it by "The Autocrats." He has in fact made this a field of his own, and it is as exciting as it is new. In a straightforward and convincing way, without undue subtlety of style or thought, he unfolds the clever game played by a group of politicians, business men and bankers, with editors and small politicians as their tools. The first stake is an improper franchise for a street railroad, the ultimate stake a United States Senatorship. Romance and mystery come into the story; but the vigorous and truthful picture of political plunderers is the absorbing thing. There is a sense in which this is the American novel, for it takes a phase of American life about which everybody hears, but which nobody has before used in fiction; and he sets it forth so clearly that in writing interesting fiction he also reveals the sordid and shrewd political life of the boss better than any political tract or essay has ever revealed him. It is a new kind of novel, and a successful kind. (Doubleday, Page. $1.50.)

The Autocrats

Miss MAUD HOWARD PETERSON has written an extraordinarily fine story, with delicate but firmly drawn characters and strong, well developed situations. The story is of the love of two friends, a quiet, sturdy Englishman and an impulsive Scotchman, for the same girl. She is the potter and the Scotchman the clay, and she moulds real heroism and manly sacrifice in the place of impetuosity. Particularly satisfactory is the literary style of the book. It is one of the best stories of the season. (Lothrop. $1.50.)

The Potter and the Clay

Superb humanity fills these letters of Prince Bismarck to his wife. They are the outpouring of a truly devoted heart. Affection warms every page. He writes to his wife, speaks to her of their common friends, his whereabouts, his longing to be with her (the duties of his offices kept them frequently apart for long times), his visitors, her health, their children, his travels, his daily life and hers. Yet in this simple range there is the greatest variety of things brought forward, as might be expected from letters covering a long course of years (1846–1889). Bismarck's love was a haven and a comfort to him and it was when he appeared most austere to the world that he turned most ea
(Harper's. $3.00.)

The Love Letters of Bismarck

M. MAURICE MÆ
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The Working Constitution of the United Kingdom

unnecessary history and criticism; in short, it is a book of information, and a useful one. (Macmillan. $2.00.)

Elder Boise

Mr. EVERETT TOMLINSON's story of a young preacher who declines a comfortable city charge for the more difficult task of building up the spiritual life of a rural community in New York is the story of a very genuine man and of people as they are. Elder Boise is earnest and conscientious, yet in his first days he does not understand some of the hard-and-fast lines of rural life; but the joy of the book from cover to cover is the author's thorough understanding of it. These village folk are full of straightforward human nature, and the reader comes to know them as if he had lived among them—as if he had lived among them with Mr. Tomlinson as interpreter. The story, too, is a good one. The young preacher's love affair did not run smoothly, and he encountered difficulties that no town-bred man could ever have foreseen or even understood. But mysteries clear up and difficulties get smoothed out, not mechanically, but, as in life, by time and labor and character and patience. And during the time that the reader follows the interesting narrative he makes the acquaintance of men and women that he will not forget. The sympathetic, humorous, earnest, genuine quality of the book make it notable as a picture of life, full both of seriousness and of humor. (Doubleday, Page & Co. $1.50.)

Labor

M. ÈMILE ZOLA used to be called a realist, but *Labor* is rather an idyllic fantasy. It imagines the transformation of nineteenth century society, as a result of economic progress and the spread of brotherly love, into a Utopia. State, church, law, private property, money, poverty and idleness disappear, and everybody is happy, healthy and rich. But the method is that of the true novelist. The characters are more than stalking-horses; a world of living, acting people is created. This is the second volume of his trilogy, the first of which was "Fruitfulness." (Harper's. $1.50.)

Pleasures of the Telescope

Mr. GARRETT P. SERVISS first wrote this book as a series of papers for the *Popular Science Monthly*. It is an untechnical guide to the amateur explorer of the sky, written by an enthusiast, and supplied with abundant charts. With this and a small telescope any one is sufficiently well equipped to penetrate a good way into the lore of the stars. (Appleton. $1.50.)

The Wilderness Road

Mr. J. H. ALTSHELER, who has already written a number of successful historical novels, tells the story of St. Clair's and Wayne's struggles with the Indian in the days of the early Republic. The atmosphere of the wild West of those days, in Kentucky and Ohio, is more or less well caught, and there is much that is exciting and interesting in the story. The young hero, who is wrongly condemned, who fights for his country on the dangerous frontier, and who finally comes into his own, carries the sympathies, and his love story, if at times monotonous, is told with considerable grace. (Appleton. $1.50.)

A Pair of Patient Lovers

Mr. W. D. HOWELL's collection of lately published magazine stories have been casually read in the magazines by many of the lovers of his work, who will welcome them bound handsomely with a colored portrait of the author. Much the most unique and characteristic tale of the book is that entitled "The Pursuit of the Piano," while the story which gives the name to the volume has all the charm of Mr. Howell's style, even though it is not thrilling in its interest. (Harper. $1.15.)

Queen Victoria 1819-1901

Mr. RICHARD R. HOLMES, M. V. O., F. S. A., Librarian at Windsor Castle, is the author of a life of the Queen which was published with her authorization in 1897. The present Life is simply the old one with an added chapter, It is a kind of chronicle of events public and private, very correct undoubtedly, but, it must be said, very colorless and dry. (Longmans. $1.50 net.)

Under the Redwoods

Mr. BRET HARTE keeps industriously at work turning out stories some of which seem like an echo of younger days. Those in the present volume which have any connection with the Redwoods are in a decided minority, but at least we are always in the hands of a veteran story-teller, whose art, if not his deeper inspiration, is unfailing. (Houghton, Mifflin. $1.25.)

The Ways of the Service

Mr. FREDERICK PALMER draws on American doings in the Philippines for a bookful of very fair stories—as stories go—about Army and Navy men. The American girl is there, of course, and she and our ever-gallant officers stand out well against a tropical background peopled with feeble brown "mannikins." There is some fighting, more love-making, and a continuous chaperon. (Scribner's. $1.50.)

On Peter's Island

Mr. ARTHUR R. ROPES and Mary E. Ropes have written an exciting story, the scene of which is laid in St. Petersburg. The plot is thick with Nihilists, conspiracies, police and murder. The principal characters are, however, two American business men, an English girl, and a handsome Polish rascal and his sister. From the standpoint of melodrama the novel is more than ordinarily good, but it has also something else to commend it, for its authors evidently knew St. Petersburg as it was in the '80's, and this gives an effect of reality to the whole book. (Scribner's. $1.50.)

THE MONTH'S MOST POPU

REPORTS from book-dealers in Kansas City, Buffalo, Washington, Albany, Toronto, New Haven, Cincinnati, Rochester, Boston, Philadelphia, Louisville, St. Paul, Chicago, Indianapolis, Detroit, San Francisco, Los Angeles, Dallas, New York, Cleveland, Pittsburg and St. Louis, and from librarians in Hartford, Minneap lyn, New York, At San Francisco, L Kansas City have ing composite lists

BOOK-DEALERS' REPORTS

1. The Helmet of Navarre—Runkle. (Century.)
2. The Visits of Elizabeth—Glyn. (Lane.)
3. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
4. Penelope's Irish Experiences—Wiggin. (Houghton, Mifflin.)
5. The Octopus—Norris. (Doubleday, Page.)
6. Eben Holden—Bacheller. (Lothrop.)
7. Truth Dexter—McCall. (Little, Brown.)
8. Graustark.—McCutcheon. (Stone.)
9. The Life and Death of Richard Yea-and-Nay—Hewlett. (Macmillan.)
10. In the Name of Woman—Marchant. (Stokes.)
11. Quincy Adams Sawyer—Pidgeon. (Clark.)
12. Monsieur Beaucaire—Tarkington. (McClure, Phillips.)
13. Like Another Helen—Horton. (Bowen, Merrill.)
14. Sky Pilot—Connor. (Revell.)
15. The Turn of the Road—Frothingham. (Houghton, Mifflin.)
16. Juldetty—McElroy. (Crowell.)
17. Up From Slavery—Washington. (Doubleday, Page.)
18. Uncle Terry—Munn. (Lee, Shepard.)
19. Sir Christopher—Goodwin. (Little, Brown.)
20. Every Inch a King—Sawyer. (Dodd, Mead.)
21. The Story of Sarah—Forssland. (Brentano.)
22. Betsy Ross—Hotchkiss. (Appleton.)
23. The Cardinal's Snuff Box—Harland. (Lane.)
24. Miss Pritchard's Wedding Experience — Burnham. (Houghton, Mifflin.)
25. Crucial Instances—Wharton. (Scribner.)
26. Clayton Hallowell—Van Praag. (Fenno.)
27. In Search of Mademoiselle—Gibbs. (Coates.)
28. A Carolina Cavalier—Eggleston. (Lothrop.)
29. Nell Gwyn, Comedian—Moore. (Brentano.)
30. A Sailor's Log—Evans. (Appleton.)

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1. Eben Holden—Ba
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3. Richard Yea-and-N
4. The Cardinal's Sn
5. Eleanor—Ward.
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15. The Redemption Merrill.)
16. The Visits of Eliz
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21. Wild Animals I H
22. Uncle Terry—Mu
23. A Woman Tenderf
24. Monsieur Beaucair
25. Elizabeth and He millan.)
26. The Reign of Law
27. Literary Friends (Harper.)
28. The Riddle of the
29. Tommy and Grize
30. Up from Slavery—

Eleven books are mentioned in both lists. Three, "Eben Holden," "Alice of Old Vincennes," and "Richard Yea-and-Nay," are among the first twelve in each list, and have, therefore, probably the widest popularity. There are two books not fiction in the dealers' list, and nine in the librarians' list.

In the dealers' reports there are rapid changes since last month. More spring books have been published, and some of the older books, like "Monsieur Beaucaire," have swung back into place. "The Helmet of Navarre" and "Penelope's Irish Experiences" have started finely. "The Octopus" has advanced from ninth to fifth place, and "Eben Holden" and "Alice of Old Vincennes" have dropped slightly, while "Quincy Adams Sawyer" has gone from fourth to eleventh. A nu for the first time la new books have t relative standing "The Helmet of N Elizabeth," 253; " "Penelope's Irish Octopus," 152; " the six are spring

There are a fe list, "The Helmet Elizabeth," and " popularity of the ol lives of Brooks and widely read. The list last month are slightly changed re

A Village Industry in Fine Rug-Making

THE Sabatos rug, which has been evolved during the last year in Center Lovell, Maine, by Mrs. Douglas Volk, with the advice and encouragement of Mr. Volk, is unique in its originality, and stands in public appreciation as an instructive example of the village home industry. Being the product of hand labor in which the natural wool is spun from the carded fleece, colored with vegetable dyes, drawn with a hook and securely knotted through a hand-spun and woven woolen foundation webbing, its beauty consists in its great durability, and in no determined or prearranged accuracy of line or pattern to affect its artistic value. As with the Oriental rugs which consume years in making, a spirit of romance is woven with the warp and a symbolic interest attaches to the design.

The Volks have their summer home in Center Lovell. Spending a winter among the farmers a year ago, seeing them in their homes and at their simple employments, observing the thrift and industry of their wives and daughters as during the long evenings they plied their hooks and utilized their savings of rags to produce carpets for home use, Mrs. Volk recognized possibilities undreamed of by the villagers. If to make strips of rag carpets promoted such industry, why not woven wool rugs that should have an element of beauty to command a market outside the village centre?

She foresaw in the neighborliness of the farmers' wives, as they gathered to share their work, common interest in a product that should dignify their labor. The project required much study, as do all first undertakings, and the solution promised to be slow, for there was more at stake than mere rug-making. As her task proceeded she saw the neglected art of spinning revived among the daughters, whose tastes were drifting from the farm home, with its round of homely duties, to the village factory and city shops. She anticipated new respect for lightly-held accomplishments springing up with the young women who had relegated weaving to the old-fashioned practices of their grandmothers. She hoped for greater things than home-made wool rugs.

Her plan was received with hesitation. Having worked in the old way for generations, the women were slow to accept new methods. But Mrs. Volk persevered, had faith in her project, and, with the help of one or two workers, undertook her first rug. The initial step secured the wool, which was found among the neighboring sheep owners. The spinners were put to work. The next process was one of experiment in dyes, and "barking bees" were in order. The woods were scoured for roots and tree bark that after long steeping in iron pots suspended from improvised cranes in the farm yards produced such dyes as gave the yarn soft and beautiful colors. This was a novel experience in which the villagers entered as heartily as the leaders.

With the wools spun and dyed ready for use a foundation of common burlaps was procured, and the workers were instructed to hook the yarn through the webbing as they had hooked their rags. This furnished a centre body of indigo blue faintly marked with "mountain" lines of green, the infrequent lines that are familiar in Indian rugs and blankets. The ends were sheared and clipped on the upper side to present a deep-plied surface that was Oriental in texture and finish. In the space reserved at either end for the border Mrs. Volk added a pattern, adapting an Indian motive. This was worked in white on a blue ground and finished in the same manner as the body. The completed rug measured scarcely more than three and one-half feet in length, yet had required eight weeks to finish.

This was an improvement on the old form of hooked rag mats, but it was only a stage in the development of the wool rug, and not enough hand-work was represented in the making. For the next rug cotton warp was procured, and the foundation was woven on an old-fashioned hand loom which one of the farmers resurrected from his garret after diligent search through the neighborhood. This was better, but a third step remained, that of weaving a woolen webbing of hand-spun warp. A secure knot had also to be devised to hold the drawn yarn in place. These two things Mrs. Volk undertook herself, realizing that she must first know how to do what she

wished the village workers to imitate. A satisfactory knot was the result of deep study and many experiments.

Last fall she brought the old loom to New York City, where she set it up in her studio, and during the winter she wove the woolen webbing, while the workers in Center Lovell have been busily and profitably employed in spinning, hooking, knotting and shearing. They send their finished rug centres to her, and she adds the border design, which for its value is happily described as "drawn badly enough to be artistic." Then she fills in the background, and the product is complete. During the year nine rugs have been finished, varying in size and color, differing in pattern and averaging in cost three dollars per square foot.

The Sabatos rug has been displayed in New York and Boston, in Hartford, at the National Arts exhibit of New York in the Pan-American Exhibition, and the process has elicited inquiry from the Atlantic to the Pacific coast. It is essentially an American product, employing native designs and giving occupation to native workers.

This village industry has been conducted on the profit-sharing plan, the receipts being apportioned in thirds—one to the workers, one for the cost of materials, and the third to the producer. The expense for materials has always exceeded its apportioned third, but has never been allowed to encroach upon the portion of the workers, which is counted as wage for their service. The material is supplied by the producer.

The Abenakee rug, made in Pequaket, New Hampshire, by Mrs. Helen R. Albee, who gives artistic guidance to the village and home workers, is an original development of the hooked rag carpet, and, with its neutral tones and decorative ornament, is recognized as an art product with a utilitarian value. A rag-weaving industry in the Catskills, under the direction of Mrs. Candace Wheeler, is given the name of the village, Onteora.

Native industries in the West take the form of silk-worm raising and silk reeling in Utah and flax cultivation in Montana. In the mountains of North Carolina the girls and women are learning to grow madder and indigo from which to produce vegetable dyes for their weaving. Weaving is a recognized branch of study in Berea College, Kentucky, where the young girls are taught to spin and weave fabrics that find a ready market in the North. So exquisite is the lace-making of women in Florida. and so profitable their industry, the United States may some day rank as a lace-making country.

A perceptible influence is at work to preserve the Indian rug in its original beauty of coloring and freedom of design, and within the last half-dozen years capital has gone to Arizona and New Mexico for the
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the Steel Corporation shall send its pensioned employees among these Salvation colonies, paying, of course, a fair share of expense.

It is estimated that the support of men injured by accidents in the service of the several corporations composing the steel combination now costs over $200,000 per annum, the average pension amounting to $250 a year. Mr. Booth-Tucker offers to provide each of these pensioners with a comfortable home and ten acres of land in any one of the Salvation Army colonies for a loan of $500 of the corporation's money for a term of ten years. At the expiration of this period he offers five per cent. interest on the amount. It is not in the plan that the sum shall be paid back, because the option of renewal is reserved for the benefit of other families similarly situated to those originally cared for. The advantages of the scheme are two-fold. In place of an absolute disbursement the pension fund not only solves its immediate purpose of aiding the disabled, but provides a permanent investment, the income of which will eventually insure a comfortable living for all dependent on the corporation's pension.

It is an endless chain of co-operative benevolence. Presumably the consent of the corporation to this plan will tend to the establishment of colonies in the neighborhood of Homestead and other centres of the steel industry, for it might be difficult to persuade the prospective pensioners to leave localities in which they have lived in order to make new homes in the far West, where the Army's colonies are all situated. The plan would further seem to make for the permanence of these Salvation colonies, and to ensure their becoming in the course of time strong and prosperous communities of the best type.

Straight from the Great Lakes to Europe

VESSELS of the same size as those in ocean use a generation ago are beginning to run between Chicago and European ports. The route is troublesome. It is through channels, canals, locks and shallows, and then across the Atlantic where it is not always amiable. But it saves reshipping, and this saving will be a great gain.

The first Chicago-European vessel had to unload part of its cargo at Buffalo, then float through the canals, and reload again at Montreal. It buried its nose in St. Lawrence mud and had other nasty adventures before it reached Montreal. But the point is that by hook or by crook it managed to get through, and that Chicago is a seaport and that ocean-going vessels can come up to the edge of the prairies and take on their products.

The greatest difficulty is the small size of the locks through which the vessels must pass

They can hold vessels about 250 feet long and of about fourteen feet draft. They prevent the use, therefore, of vessels of over 3,500 tons; and some of this small tonnage has to be unloaded before the Welland locks can be passed.

The Georgian Bay canal scheme is regarded as the only way out of the difficulty. The present St. Lawrence system cost about $75,000,000 and has just been completed. To ask the Canadian Government now to build the Georgian Bay canal at an estimated cost of $67,000,000 is at present impracticable. Yet this will undoubtedly be done before long, for the agitation in Canada is incessant.

The prospective value of the canal is so great that it seems almost visionary. It would bring Chicago, "the grocery store and meat shop of the world," 900 miles nearer to Liverpool on the through trip than it is now. That nearness would mean reduced freight charges, quicker delivery, and a dozen other obvious things. And the through trip would mean in addition, on the return voyage, the uninterrupted transmission of all breakable goods to the Chicago market. Considering the huge eastward shipment of food products, and the large westward movement of European manufactured goods, the Georgian Bay plan seems to be a necessary one.

The aggregate burden of American vessels is more than 5,000,000 tons, and more than 1,500,000 tons of this is on the Great Lakes. This large proportion would advance by leaps and bounds if the canal were cut; for the locks would, according to the plans, admit vessels 500 feet long and twenty-three feet deep in the water. Eastern railways and seaports would apparently suffer from the competition of such a canal; but the traffic of the future will be great enough to keep rails and water routes both busy.

With ships making the most of the St. Lawrence system, and with a possibility of the Georgian Bay route being some day opened, the Northwest has its day of greatest development and wealth-getting yet ahead of it. Great as the present is, its golden age may be a thing to come.

Music by Machinery

WHEN it was proposed some years ago to apply a mechanical contrivance to the playing of the piano, the proposal seemed doubtful in the extreme, and even silly. But in a comparatively short time really remarkable effects with the mechanical piano-player have been obtained, and the future is full of promise.

At the start the instrument had the great fault that seemed impossible of correction. Machinery and art are far separated, and while the combination of cogs, and pneumatics and paper rolls might be able to grind out a tune with precision from the piano, it was
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in economical steel production, as it is near the sea and can draw its raw material for manufacture from the vast deposits of Cuba, owned by the Standard Oil Company; the deposits of Venezuela, owned by the Orinoco Iron Company; and the deposits of Santa Marta, Colombia, owned by Caracristi & Co. All of these ores lie within about 1,000 miles of the new petroleum centre and offer to Texas the possibility of becoming the steel producing centre of America.

The Growing Use of Private Cars

PRIVATE railway cars have always been associated in the popular mind with great wealth, but a plan has been developed which makes it possible for even a vaudeville actor or a business man in ordinary circumstances, or anybody else reasonably well-to-do, who wishes to make a display or to enjoy the luxury of travel, to own a private car built according to his own specifications. A car-refitting company in New York City buys old Pullman coaches, tears the inside furnishings out, and refits them according to the wishes of its customers. Whatever kind of private car a man may wish he may order—parlors, handsomely carpeted, sitting-rooms, dining-rooms, sleeping compartments, smoking-rooms—all with equipment more or less perfect according to the price. And cars are refitted in this way and sold for prices varying from $1,500 to $15,000.

Very handsome and serviceable cars have been built from the old "castaways," and the man of moderate means can travel privately and comfortably in a home of his own. It is an interesting evidence of American manufacturing thrift and of the growth of wealth.

American Locomotives Abroad

THE English have been severely criticising American locomotives because they consume more fuel and for other reasons cost more to run than machines of English manufacture. Yet the growth of our export trade in locomotives continues to grow. Last year 525 were exported, valued at $5,592,403, whereas ten years before, only 144 were exported. English statisticians record the value of their exported machines and not the number of them. The value is still slightly in advance of the value of American locomotive exports; but the American trade is fast gaining on the English.

Two of our consuls have recently sent home notes that have some bearing on this subject. In 1899 five English locomotives were ordered for the Jamaica Government Railway. One of them was tried over a graded route early this spring and after considerable balking came to a standstill—a failure. The interesting part of this is that American locomotives had frequently climbed the grade without any trouble whatever. Again, the harbor authorites of Calcutta advertised for bids on locomotives. The lowest English bid was $7,349 for each locomotive, to be delivered within nine months; the lowest American bid was $5,598, delivery within six months. Of course, we received the contract. An offset to the greater quantity of fuel required by the American machine, is its greater hauling power.

An American locomotive is a monster of strength and it is not the sort of thing to "hang from a lady's watch-chain—if it were smaller." It is a mighty worker, most popular in these parts of the world where things are done on a massive scale. It is perhaps for this reason that it is in favor in those parts of the world where heavy new tasks must be done—Siberia, South Africa, Egypt, Russia, India, Chili, Sweden and Japan.

Where Wheat Is King

WITH the usual noise which accompanies everything in Kansas a hundred million bushels of wheat have been harvested and placed on the market by Sunflower State farmers this year. When one reckons that every acre of wheat means from five to fifteen dollars clear profit, one can readily see why the loss of one day may mean a thousand dollars to a farmer who is running fifteen binders and a hundred men.

From out of the deep sea of mortgages and bonded indebtedness Kansas has now arisen until she is the kingdom of wheat—which means a moneyed centre.

From early June until middle July thrilling scenes are enacted in the Kansas harvest fields. The hum of the binder is heard on every hand. Men hurry into the fields at sun-up, and are reluctant to quit them at dusk. A cold dinner is eaten while the binders are still going. The horses are fed as they walk around the fields, and water is handed to men on the go. Mechanical experts drive around the binders, and a break-down is repaired in a few minutes. In a field where many binders are at work the harvesting is carried on with clock-like regularity.

Farmers not only have the running of their harvest gang down to a fine point, but they have the cost price of everything at their tongue's end. A binder will cut fifteen acres a day, and the cost of running it is forty cents an acre. Therefore, a man who is running fifteen binders is at a considerable expense—about $100 every day. The cost of harvesting a crop of wheat, from the sowing to threshing, is figured as follows: Plowing and harrowing, $1; seeding and drilling, $1.50; cutting, $1.25; threshing, $1.75; hauling, $1.50; total, $7. The farm help is paid $2 a a day, and is expected to work from sun-up to dusk, with double pay for nights or Sundays.

THE WORLD'S WORK

AUGUST, 1901

VOLUME II NUMBER 4

THE PAN-AMERICAN EXPOSITION

BY

WALTER H. PAGE

"WHATEVER else we may do," said one of the directors of the Pan-American Exposition, at Buffalo, when the plans for it were under discussion, "we must make a beautiful spectacle." This purpose was never for a moment forgotten; it became the dominant purpose; and it is as an outdoor spectacle that the Exposition is most novel and noteworthy. It is its spectacular features that will be longest remembered and that will have the greatest effect on the popular mind. And it is a sight worth traveling across the continent to see—a sight such as nobody ever saw before. Landscape architects, engineers, architects, sculptors, decorators, painters, electricians and gardeners, have all worked towards one end and by one great plan; and the result is a group of beautiful buildings, so placed, so colored, so lighted, and so harmoniously adjusted to a general outdoor festal scheme that the effect is something new in the world. The ambitious and even audacious coloring of the buildings, and the prodigal and artistic diffusion of electric lights, are experiments that were never tried before. They are both original and they are both successful. The result is a new kind of outdoor scene by daylight, and especially by electric light, a sight that gives a new experience and makes a lasting impression.

The most impressive view—the view that one ought to take first in order to get the full effect of the whole scene—is from the Triumphal Bridge just at dusk when the lights are first turned on. The great towers of the bridge make a dignified, stately approach to the court with its play-day effect—its domes and pinnacles and warm colors, the fountains, and the great electric tower as the climax of it all. You have hardly realized the scene as it appears in the dusk, when on the rows of posts tiny dots of light appear in clusters, like little pink buds in a nosegay. You become gently aware of similar pink points on the tower—apparently millions of them; and on either side they outline all the buildings—in rows about the panels on the domes, under arches, over windows, everywhere. The buildings themselves seem for an instant to become invisible, and you see only their outlines marked in these tiny dots of fire. And the court seems larger than it was by sunlight, for you seem to see a

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GENERAL VIEW OF THE COURT OF FOUNTAINS, LOOKING SOUTH

Taken from the Electric Tower. On the left the Liberal Arts Building and the Ethnology Building. On the right the Machinery Building and the Temple of Music

whole city of towers and domes, and eaves and doors, outlined in sparks. Then the pink points grow brighter and change their hue, and in another moment the full illumination bursts forth, and the whole great court becomes luminous with a soft brilliancy that does not tire the eye. And it is a new kind of brilliancy. You are face to face with the most magnificent and artistic nocturnal scene that man has ever made. It is an effect so novel and so gentle in its glow that you think of fairy-land, not a fairy-land of tinsel, but the fairy-land that you once believed in.

I had the pleasure to see this illumination first in the company of a child of ten years. She stood for a minute in speechless wonder. Then she cried "Oh, isn't it beautiful!" And she danced in forgetfulness of herself and asked "Is it really real?" For the sensation is of an optical illusion. You ask yourself if it be not a trick played on you with mirrors and lenses. But, when you turn your eyes away from the brilliancy of the electric tower and

Photographed by A. W. Simon

THE TEMPLE OF MUSIC

Photographed by W. H. Lyman

THE MACHINERY BUILDING

Facing the Court of Fountains

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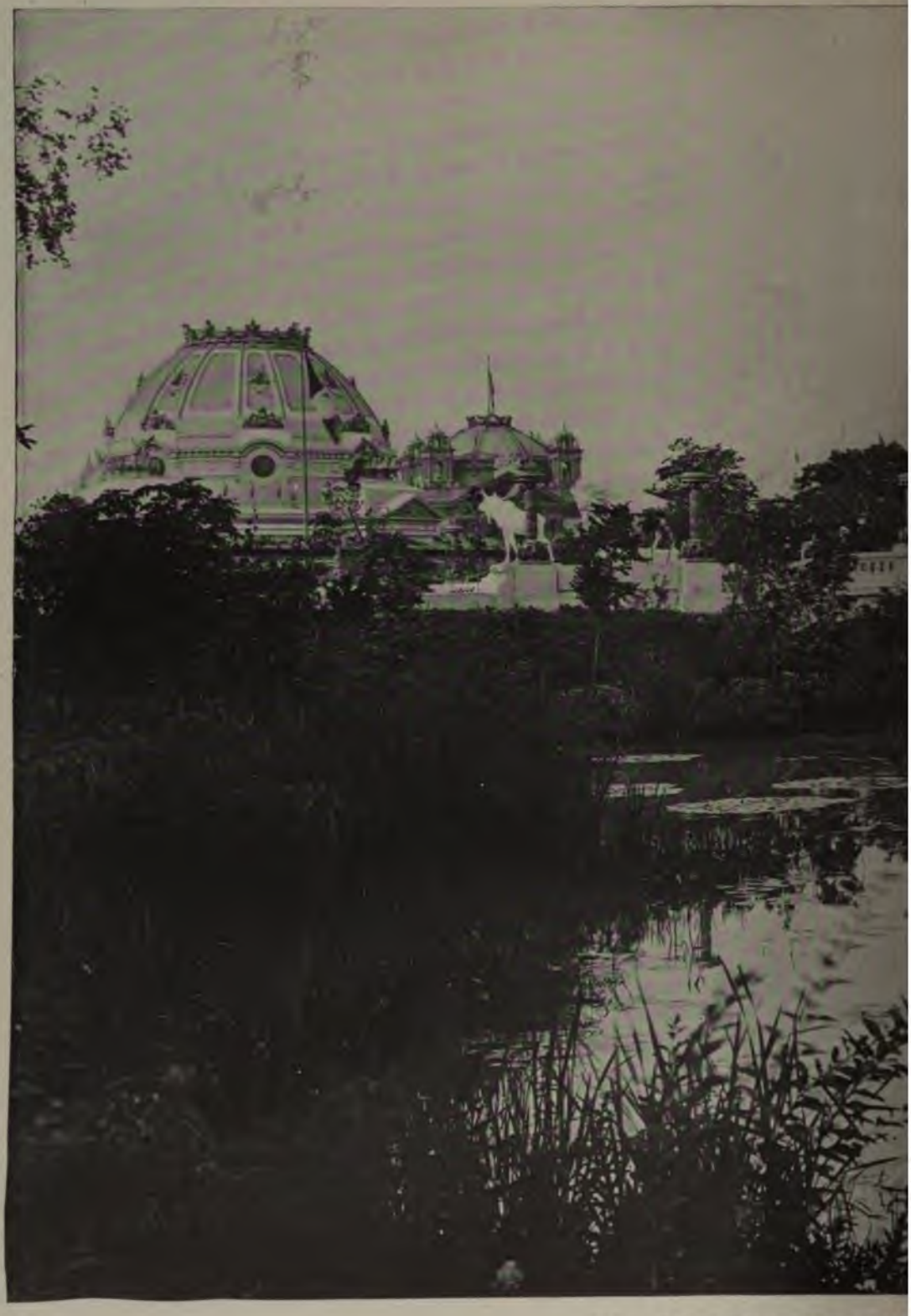
Photographed by A. R. Dugmore

THE ETHNOLOGY BUILDING ILLUMINATED



LILY POND AND BRIDGE, THE

Photographed by C. D. Arnold

ID TOWERS AT A DISTANCE

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Photographed by A. R. Dugmore

THE TEMPLE OF MUSIC AT NIGHT

the grounds. From this statue an avenue leads over the Triumphal Bridge into the main court and to the Electric Tower.

Starting at the statue of Washington, the avenue leads northward up a gentle incline, between rows of columns and between the four great towers of the bridge. These towers are crowned with equestrian figures of a standard bearer, and are ornamented with symbolical groups of statuary. One great pillar by its sculpture and its inscription stands for Patriotism, another for Liberty, and so on.

The canal on either side of the bridge broadens into a lake, and symbolical figures of great beauty by Mr. Martiny represent the Atlantic Ocean and the Pacific Ocean. By this approach over the bridge to the main court a single view takes in the whole scene, and the unity and simplicity of the ground plan become obvious. There is one long court running from south to north from the Triumphal Bridge to the Electric Tower. With its approach, and with the plaza behind the tower, this court is very much longer than the central court of any preceding exposition. Its width admits the lakes and fountains in the centre, and broad ways on either side, which give the buildings and the tower room enough for effective display.

The transverse court (east and west) intersects the main court just north of the bridge. Their intersection makes the great area of the esplanade, which will hold a quarter of a million spectators. The transverse courts end in curved groups of buildings, the Government group on the east, and on the west the buildings given to Horticulture, Mines and the Graphic Arts; and at each curved end of this transverse court are a lake, a sunken garden and groups of statuary.

Along the main court towards the tower are the six other principal buildings—first the two octagonal domed buildings, the Temple of Music, and facing it the Ethnology building; then facing each other across the main court, the building for Machinery and Manufactures and the Liberal Arts building; next the Electricity building, and facing it the Agricultural building. The great Electric Tower stands in the space between these. Beyond and on either side are restaurant buildings, and back of all the great gates and the connecting colonnade.

This is the general plan. And you can see it all from one point in front of the Triumphal Bridge. Outside these courts lie many buildings and the greater part of the area covered by the Exposition. But it were better at first to ignore these; for standing anywhere in the court the buildings outside it are properly shut from view. You are aware only of this one spectacle, and all the buildings and all their accessories—lakes, fountains, statuary, colonnades—are a unit. They have been treated as a unit by engineers, architects, sculptors, decorators, electricians.

And it is necessary to realize how large this area is which has had this unified treatment. The space in the Court of Honor at Chicago was 563,000 square feet; the court area at

THE ELECTRIC TOWER, LOOKING ACROSS THE PLAZA
The gateway on the left, the tower of a restaurant building on the right

Paris was 720,000; and the court space at Buffalo is 1,400,000—nearly three times as great as the Court of Honor at Chicago. By daylight it seems smaller than it is; and by the electric light it seems very much larger.

A connection is made between the buildings in ways that add wonderfully to the beauty of the whole group. Starting again at the bridge, and going northward on the right side (east) a colonnade, a long row of highly colored columns supporting a roof (the pergola) makes a curved passage to the first

Government building. The group of Government buildings makes a curved end of the east and west court, and in front of it are a lake and fountains and groups of statuary.

The octagonal domed Ethnology building stands at the eastern corner of the two courts as a sort of pillar. Beyond it and connecting it with the Liberal Arts building is a screen of columns with a garden behind it. Between the Liberal Arts building and the Agricultural building is the sunken garden of the Mall, which seems to connect the two buildings on either side rather than to separate them. The restaurant building which comes next extends to the propylæa. The colonnade extends in a graceful curve behind the tower. The buildings on the other (the west) side are connected in the same way.

Now it is this group of buildings and their accessories that make the spectacle. The most noteworthy aspects of it are, of course, the landscape, the architecture, the color and the illumination.

PREDOMINANCE OF THE SPECTACULAR

IT is the generous and even lavish way in which the beautiful spectacular effects have been provided that gives this Exposition distinction over every preceding one. Those who recall the Centennial at Philadelphia in 1876 will recall also the absence of any spectacle. It was the note of instruction that the builders and managers of that fair struck, but not the note of beauty. But at Chicago in 1893 the Court of Honor was a thing of such beauty that nobody who saw it will ever forget it, and since then the spectacular part of every fair has had emphasis. It is hardly too much to say that it is likely to overshadow every other aspect of the Buffalo fair. The decorative effect is heightened even by the shrubs and trees and flowers. There is green everywhere that it is possible to have it, and there is a succession of very beautiful floral effects which will please the visitor all summer long. Wherever trees could add pleasure to the view they have been placed, either in the soil or in

Photographed by W. H. Lyman

THE GRAPHIC ARTS BUILDING

THE TEMPLE OF MUSIC

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NORTHWARD VIEW OF THE ELECTRIC TOWER OVER THE TRIUMPHAL BRIDGE

THE ELECTRIC TOWER
A front view from the Southwest

huge tubes, and lawns make green all untrodden places.

Organ recitals in the Temple of Music and outdoor music by bands, three at a time, indicate the determination to let every art contribute its full share to the people's enjoyment. Thus it has come to pass that the idea of "a good show" has been developed to the utmost. If there were no exhibits inside the buildings, the exterior views would make the Exposition noteworthy.

THE ARCHITECTURE

THE architects, carrying out the same purpose to make a worthy spectacle having both unity and beauty, undertook the task not of building an exposition, but of building a Pan-American Exposition. The buildings must express the nature and the purpose of this particular enterprise. They naturally chose a Spanish Renaissance style, which fit in with the Central and South American suggestion, and permitted a free play to the individual architects; and the general festal result that they aimed at has been achieved with great success. After you pass the bridge you find nothing severe, nothing that is even stately in the architecture, except the Electric Tower. Every building is suggestive of a holiday and of a play-place. Such a style lends itself, too, best to brilliant results in color and illumination. The greatest possible effects have been achieved in playfulness and in variety—not at the expense of a proper dignity; but there is nothing of the severely classic or monumental effects that were worked out in the Court of Honor at Chicago. The result is panoramic, festal, even gay. And the general arrangement is good—the scheme that includes the landscape work. The avenue approaches the bridge at a gentle incline; when you have crossed the bridge you see straight before

you the great court, the Electric Tower, which is the climax of it, standing directly before you near the other end, with the curved screen behind it; and at either side are the curved transverse courts with their sunken gardens and fountains. The main court is wide enough to give the buildings a good setting, and the two octagonal domed structures at the corners (the Temple of Music and the Ethnology building) emphasize the junction of the two courts. The clusters of towers and the succession of domes, and especially the colonnades, give a chance for a luxuriance of color and ornament that carry the gaiety of the whole scene to a height never before reached in an architectural effort on our continent. In the general spectacle there is no suggestion of machinery and merchandise. In fact, the buildings have been criticised for this very reason; for floor space has been sacrificed to colonnades and porticos.

In the architecture, as in everything else, it is the total effect that is most impressive. The court is one large scene, so set as to lead up to the great tower, with its severer form and its more refined colors.

It is no part of this general description to analyze the separate buildings, but most persons will agree that Mr. Stearns's Horticultural building is both in its architecture and its ornamentation one of the most successful of the whole group. It has a lantern roof and four towers (domes) at the corners; the roof is of red tile, and the doorways and columns are beautifully and most luxuriously ornamented.

This luxuriance becomes floridity in the Temple of Music, because both of the color and of Mr. Konti's reliefs and statues. Its excessive ornamentation and coloring give offense to those whose only measure of beauty is the rigid classical measure. The Electricity building, too, is admirably planned and executed and ornamented. It is one of the most impressive and pleasing of the whole group.

But the architectural crown of all is Mr. J. G. Howard's Electric Tower. The

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THE ELECTRIC TOWER AND THE FOUNTAIN OF ABUNDANCE

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Photographed by A. R. Dugmore

THE HORTICULTURAL BUILDING

The Fountain of Nature in front

THE ETHNOLOGY BUILDING

square shaft shows three stages of structure, each smaller than the one below it, the nude, gilded figure of the Goddess of Light surmounting it. It is flanked on either side with long curved colonnades. The main tower has panels which are perforated, and these give a certain airy relief to its massiveness, and present the appearance of transparency at night. Above the square part of the tower is a circular colonnade; then the cupola and the goddess. Not the least pleasing part of the whole scheme are the colonnade and the gates behind the tower. They give a fitting background to the whole scene.

The plaza behind the tower, with a sunken garden in the middle of it, is a sort of secondary playground. On either side are the restaurant buildings, through which on the east you enter the Stadium, and on the west the Midway.

THE COLOR SCHEME

THESE buildings, so grouped about so spacious a court, would have made a noble appearance if they had been painted in quiet browns and grays and blues. But such treatment would have made a very different spectacle. Mr. Charles Y. Turner's color scheme will grossly offend you or it will greatly please you. It is an original and ambitious effort, and a successful one. He made models of all the buildings from the architects' plans, and he worked out this color scheme by long experiment in his studio in New York City, before the buildings were erected. He made it by actual experiment, with reference of course to the long vista, made it expecting violent criticism, and made it with the boldness of a strong conviction. His general aim is to symbolize by the use of colors the advance of civilization, for he has followed Mr. Bitter's general plan, which he has carried out in sculpture—to represent the progress of man from barbarism. On the buildings in the southern end of the great court the primary colors are laid on in all the richness of the savage taste. They become gradually milder till they culminate in the soft harmonies of the Electric Tower, which is the climax of the whole plan in architecture, in color, and in illumination. The primary colors used most at the entrance near the bridge plaza Mr. Turner's fancy, too, because they are warm and suggest a welcome. The greater part of the external area—the main walls of the buildings—are, of course, in subdued colors, drabs, grays, warm white; and the primary colors are used at the structural parts of the buildings—doors, windows, towers. Harmonious effects forbid the juxtaposition of rich primary colors unless a space of ivory white or of gray intervenes between the stronger primitive colors, and Heaven be praised that it does.

The mere mention of a succession of colors conveys no clear idea to a reader. But here are Mr. Turner's own explanations of the

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THE MAIN UNITED STATES GOVERNMENT BUILDING

The Fountain of Man in front

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THE TRIUMPHAL BRIDGE ILLUMINATED

scheme as applied to several of the buildings:

Horticulture—orange, with details in brilliant blue, green, rose and yellow.

Music Hall—red.

Photographed by C. D. Arnold

THE TOWERS OF THE TRIUMPHAL BRIDGE

Machinery—greenish gray.

Restaurant Group—ivory, accented with green and gold.

Electric Tower—ivory yellow, gold and green.

The roofs of the Exposition are for the most part covered with red tiles, though prominent towers and pinnacles are in many cases decorated with green or blue-green or with gold.

But this gives no notion, for instance, of the effect of the Temple of Music. The violent Pompeian red on the general scheme of salmon divides mankind into two warring groups, and apparently every other color is used somewhere in the elaborate decorations. You can never convince half the world that this is not a flagrant barbarism in colors. But it fits (so at least I am timidly willing to swear) into the general scheme most harmoniously.

The Government buildings are unfortunately out of chromatic harmony with the others, because the Government architect (or somebody in authority) did not fall in with

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THE MAIN UNITED STATES GOVERNMENT BUILDING, BY ELECTRIC LIGHT

The Fountain of Man in front

the general plan. This is the single instance where there was a failure on the part of anybody to work towards the common end.

It would be absurd to undertake a literal description of the colors. No adequate conception of the effect can be conveyed by description nor by pictures. Nor does the reproduction of the colors on any one of the buildings give an adequate idea of the whole group nor of the general effect.

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THE MACHINERY BUILDING

South Entrance

THE ELECTRIC TOWER
Taken from the Ethnology Building

Every separate building has a color scheme of its own, and is consistent with itself as well as harmonious with the whole group. About the doors and the towers are most wonderful effects in green and red and blue.

THE NOTE OF NIAGARA GREEN

And running through the whole plan from the deeper barbaric primary colors to the delicate blue on the propylæa there greets you everywhere at intervals the Niagara green. This binds the whole scheme together. "My idea," said Mr. Turner, "is to have the sharpest and freshest green known carried throughout the entire scheme, and that is my reference to power. Green is one of the more recent and refined colors. It has not long been used in art. Pick up any picture painted long ago, and you will look in vain for a suggestion of green in it. The grass will be represented as brown. They said it was impossible to secure the grass-green effect, but it is done nowadays."

This color work is going for a long time to be the most interesting thing in all discussion of the fair, for it is the most original and daring thing. It is the thing that both offends and pleases most, and and it will convey a useful suggestion.

We are timid novices in the use of color for exterior effects. We have had white houses and houses in colonial yellow; we have had brown houses, and we have had green blinds all these years of our lives. We have had inharmonious novelties of many kinds. But few men have considered the effects that may be produced by exterior colors when studied with reference to the surroundings—the natural scenery and adjacent buildings. Who paints his house with reference to the color of his neighbor's house or to its natural surroundings?

And there is a larger question than this opened by Mr. Turner's color scheme. In almost all the arts we have gone on accepting the classic canons as we interpret them, and since we do not know what colors the Greeks used on the Parthenon, for instance, we have associated Greek art, and inferentially all good art, with white—or, at most, with a very modest and timid use of color. And now for the first time in modern life an effort has been made on a large scale to work out a rich and various and bold use of exterior colors.

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EAST COLONNADE OF THE ELECTRIC TOWER

Photographed by W. H. Lyman

A VIEW FROM THE MALL

Mr. Konti's figures of playing children. The Temple of Music in the background

The effort will provoke a re-examination of the merely conventional opinions that we carry with us about more arts than one.

Doubtless we shall witness many odd and some violent results of a popular awakening to the possibilities of exterior color, but we may have a quickened sense of great opportunities opened by this bold experiment.

THE COLORS BY NIGHT

By night the colors are more attractive than by day. The louder chromatic notes are softened. The electric light is so diffused that few color-effects of the day are lost, and new ones are made. The green ornamentation on the great tower is green by the electric light—a softer and gentler green, and the ivory white is smoother, and the gold seems a deeper yellow. You may wander about the court every night for a month without exhausting the beautiful color and light effects about the doors and the cornices and the

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Photographed by A. R. Dugmore

THE ELECTRIC TOWER

(Front view)

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LOOKING WESTWARD ALONG THE CANAL TO THE ILLUMINATED ELECTRIC TOWER

(Side-view)

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THE MINES BUILDING

towers. The soft illumination steals out from under the eaves and from concealed places within the moulding over the arched doorways; and the reds, and the greens, and the blues are seen almost as if by daylight—with this difference—that they are softer; and in these details also the fairy-land illusion is preserved. There are a thousand pictures simply of light and color that will impress one with delight.

THE STORIES TOLD IN SCULPTURE

THE sculpture, too, is an integral part of the general scheme. It is decorative but it is also interpretative of the whole plan and purpose. The sculptors worked with the architects. Every figure and every group has a significance not only by reason of its individual value but also by its position and by its relation to its neighboring groups and to the buildings.

The succession of Expositions, beginning in 1893, has given American sculptors new (and, one might almost say, their first great) opportunities; and the opportunity given at Buffalo is much wider than at any previous Exposition. The generous scale of the provision for sculptural ornamentation permitted the use of not less than five hundred pieces in all, of which one hundred and twenty-five are original and were made for this Exposition.

Besides forming an integral part of the whole artistic plan, the sculpture tells a consecutive and complete story of its own. Its allegory is threefold. Like all other parts of the general plan the sculpture also should be approached from the Triumphal Bridge. On the right, in the end of the transverse court in front of the Government buildings are placed those groups that tell the story of Man and of his Rise to Civilization; the corresponding groups on the left, in front of the Horticultural building, tell the story of Nature and her Wealth; and the groups in front, in the main court, tell the story of the Genius of Man. The most conspicuous object at the south end of the main court—the central

figure of the whole sculpture plan—is the Fountain of Abundance.

THE STORY OF MAN

Going back now to the east end of the transverse court, in front of the Government building, we see Story of Man told by a series of groups. There stands in the most conspicuous position Mr. Grafly's The Fountain of Man. The partly veiled double-faced figure of Mysterious Man crowns the fountain, on the pedestal of which the Five Senses are symbolized, and beneath the basin are the struggling figures of the Virtues and the Vices. This fountain is flanked by the fountain of Hercules and the fountain of Prometheus. Mr. Boyle's The Savage Age in the East, is a group of men capturing women and robbing a dead enemy, representing man as he preyed on his fellows; and his Savage Age in the West is a group of Indians in a war-dance, a woman beating an Indian drum, and a child and a dog—Indian savage life. Mr. Konti's The Despotic Age is a group showing the next stage of social development—the tyrant with his slaves dragging a heavy chariot, captive women in chains behind, and in front a fury hurrying them on, a stately figure and group of great power, a thing long to be remembered. The Age of Enlightenment by Mr. Herbert Adams completes this allegorical group. Such is the Story of Man in this sculptural narrative.

THE STORY OF NATURE

On the opposite side—in the court in front of the Horticultural building, is the Story of Nature and her Riches. The central group is Mr. Brewster's Fountain of Nature. The figure surmounting the fountain is a nude female, erect, with hands above her head, and the great forces of nature are represented by figures below. On either side of the Fountain of Nature are the figures of Kronos (Time) and of Ceres. Mr. Elwell's Kronos is a figure veiled to represent the mystery of time, and standing on a turtle, to suggest its slowness, and with winged arms to represent its swift-

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Photographed by A. R. Dugmore

THE GRAPHIC ARTS BUILDING (Southern view)

ness. Six groups represent different manifestations of Floral Wealth by Miss Pratt, Mineral Wealth by Mr. Niedhaus, and Animal Wealth by Mr. E. C. Potter.

Returning to the main court we see at the south end of the basin the joyful Fountain of Abundance, built after a design by Mr. Carrère. A dancing female figure (by Mr. Martiny) tosses a garland of flowers to a dancing group of cherubs who in turn toss flowers and fruit at her feet. Such is the festal figure that greets the visitor as he looks down the court towards the tower.

THE ACHIEVEMENTS OF MAN

The groups in the main court symbolize the Works of Man. The large group represents the Genius of Man, and the two subordinate groups by Mr. Bartlett represent the Human Intellect and the Human Emotions. This last group consists of a female figure representing Love and a prostrate male figure in the despondent attitude of a rejected lover. The conventional symbolism of most of these groups is forgotten in the presence of this great piece of work which goes straight to a fundamental emotion and is modern, direct and strong. Smaller groups are Mr. and Mrs. Tonetti's Birth of Venus and Birth of Athene. Other large groups appropriately placed about this basin and adjacent to the main buildings are Mr. Proctor's Agriculture and Manufacture and Mr. Lopez's Arts and Sciences.

NIAGARA IN SCULPTURE

Beyond the mall is the Electric Tower. Its sculptural ornamentation consists of figures and groups that represent the power and subjugation of Niagara. The chief of them are Mr. Barnard's groups, on either side of the cascade. One is Primeval Niagara, or the Great Waters in the Days of the Indian, which represents the awe and mystery of the cataract. An Indian in a canoe is going over

Photographed by C. D. Arnold

THE SOUTHERN ENTRANCE TO THE EXPOSITION GROUNDS

Photographed by C. D. Arnold

THE ETHNOLOGY BUILDING, ACROSS THE COURT OF FOUNTAINS

Photographed by C. D. Arnold

THE TOWERS OF THE TRIUMPHAL BRIDGE
From the Flower-Garden, looking North-east

one hand and in the other the skin of an animal. The other is Niagara To-day, or the Great Waters in the Days of the White Man,

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"AN IDYL OF THE PRAIRIE"
Figure of resting buffaloes

the falls, holding high his bow and arrows in which represents the subjugation of the falls. A youth rises from the water holding in one hand a hammer and in the other a small figure of a woman with a globe in her hand. Two figures below him hold shells from which the subdued waters flow, and other figures typify the complete harnessing of the great power. In the recesses of the colonnade about the tower are figures representing the Six Great Lakes; and Mr. Weinman's spandrels represent the Four Rivers. Surmounting either end of the colonnade are the Torch Bearers, and Mr. Adams's Goddess of Light crowns the tower itself.

Thus a story in four chapters is told in sculpture—the Rise of Man, the Riches of Nature, the Achievements of Man, and Niagara's Power and Subjugation by Man.

Behind the tower in the plaza and along the colonnade between the propylæa and in front of the entrances to the Midway and to the Stadium are statues, most of them classic reproductions,

which give a festive effect—fit ornamentation for a great play-ground.

Going back again to the Triumphal Bridge, we see on every one of the four great pylons a spirited mounted standard-bearer by Mr. Bitter; and in the niches of the pylons are figures allegorical of the civic virtues—Truth, Liberty, Justice, Courage, Patriotism, Tolerance, Benevolence. As ornaments on the flag-poles at either side where the canal broadens into lakes, are graceful figures by Mr. Martiny representing The Atlantic Ocean and The Pacific Ocean. Such are the sculptural ornamentations of the impressive Triumphal Bridge. The sculpture, the monumental kind of architecture, the decorations and Mr. Gilder's patriotic inscriptions all tell the story of the struggle and triumph and freedom of the United States.

Outside the court at many places are other groups and figures, among which are Mr. Roth's Chariot-Race near the Woman's building and his Horse-Trainer at the entrance to the live-stock exhibit; Miss Yandell's group, the Struggle for Existence, the original of which is in Providence, R. I.; Mr. Macmonnies's Group of Horses; figures of the resting buffaloes near the entrance to the grounds and at the mall entrances to several of the buildings; figures of a buffalo and of a moose on the bridges and Mr. St. Gaudens's General Sherman.

There are besides many groups and studies in relief placed on the buildings. Especially noteworthy are Mr. Konti's four groups over the four entrances to the Temple of Music, which represent Heroic Music, Sacred Music, Gay Music and Lyric Music, and figures of children with musical instruments in relief which adorn the building. Mr. Konti has playful child-figures which ornament the balustrades about the main basin—and wonderfully attractive they are. There are four quadrigæ

THE FOUNTAIN OF ABUNDANCE AND THE TEMPLE OF MUSIC

Photographed by W. H. Lyman

A DETAIL IN THE COURT OF FOUNTAINS

on the Ethnology building whereby Mr. Proctor means to represent the four races of men, and pedimental groups by Mr. McNeill of very great fitness and beauty.

AMERICAN SCULPTURE IN FACT

The figures and groups, of course, have every one an artistic value of its own besides its value as a part of an allegory. Some are charged with imaginative suggestion and some are exceedingly formal and didactic. But here for the first time on a large scale has sculpture been used in our country for its true purpose, which is not a museum or a drawing-room purpose. So accustomed have we become to sculpture in museums that we are likely to forget that it is primarily an art to produce out-door effects, to be used in connection with landscape and architecture. The value of this generous use of it at Buffalo is, for this reason, incalculable. We may here see this art in its proper coördination to other arts, to the correction of our museum notion of it. It is vital here, in these allegorical

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THE FRONT (WEST) ENTRANCE OF THE AGRICULTURAL BUILDING

groups, in a way that it has never before been made vital on a large scale in our country.

And the most significant fact for the future of the art in the United States is the way in which it has here laid hold with a free hand on native subjects, which give play to the creative imagination. Mr. Barnard's treatment of Niagara is full of imagination, especially of Primeval Niagara. This group and Mr. Tefft's Lake Superior and Mr. Martiny's Atlantic Ocean and Pacific Ocean and several such subjects as these make American sculpture a fact. This rich display is itself worth a long journey to see.

ILLUMINATION AS A FINE ART

ELECTRIC illumination has here wrought its greatest triumph, its most splendid effects, and has reached a development that has put it high among the spectacular arts.

"We have now done what I have long wished for a chance to do," said Mr. Luther Steiringer, the electrician. "We found out how to do it at Omaha. We have had a chance to do it here." It was at the Omaha Exposition that Mr. Henry Rustin devised the most beautiful plan of illumination that had up to that time been carried out. At Buffalo he has done what the experience at Omaha suggested as a possibility. The secret of the beautiful illumination is the even diffusion of the light. The unit of the common incandescent bulb is sixteen candle-power. The unit of those here is eight candle-power. The light, therefore, is not concentrated nor glaring, and it is not wearisome to the eye. It is soft. The difference between this great court lighted by a large number of these lights of a small unit and lighted by arc-lights, is like the difference between a ball-room lighted by a multitude of candles and one lighted by a single great blazing chandelier. You will never tire of this vast area of illumination, so admirably is it diffused.

There are, perhaps, not half a million electric bulbs in this court, but there are hundreds of thousands of them, and you are willing to believe that there may be millions. The tower is, of course, the great centre of brilliancy; for the illumination, like the architecture, the sculpture and the color scheme, culminates in the tower. It shines like diamonds; it is like a transparent soft structure of sunlight held stationary against the background of darkness; it is like brilliant star-clusters broug
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of the general nocturnal scene. They are not garish, not loud. They are in harmony with everything else. A plan for a novel light-effect is to illuminate a bed of flowers about the Fountain of Abundance by electric bulbs, so concealed that their light will seem to come from the flowers themselves.

The tower, it will be recalled, is nearly four hundred feet high. The torch of the surmounting Goddess of Light is four hundred and ten feet above the basin, and the main structure of the tower is eighty feet square. This great area is an almost solid mass of soft illumination. It may be seen from thirty to fifty miles, according to the clearness of the atmosphere and of the gazer's veracity.

From the top of the tower a searchlight plays, with which the Fountain of Nature and other striking objects are bathed in additional illumination. Indeed the number and the variety of color effects that may be produced by these arsenals of light are beyond calculation. On no two nights are they the same. This great illuminated tower is the creation of the Exposition that will be longest remembered and most often reproduced, and it will remain in every visitor's mind as the symbol of the brilliant "Rainbow City."

THE ELECTRIC FOUNTAIN

Visitors to Chicago in 1893 will recall the electrical fountain which played at one end of the Court of Honor, producing brilliant colored effects in water. Electric lighting has since that time been so highly developed as a fine art that such concentrated fountain-effects are now regarded as "shows." They do not fit into a scheme of general illumination. The electrical fountain at Buffalo, therefore, which is much more elaborate than the one at Chicago was, has been put far off from the court on an island in the lake at the southern end of the grounds. There it is a spectacle by itself; and a most brilliant and varied one. Such extraordinary effects in water-illumination are produced that many parks are likely henceforth to have electric fountains as a part of their play-day equipment. Lilies, sheaves of wheat, "ring-jets," "pulverizers," "mist-banks," and figures of many sorts are made by fountains; and there is the most gorgeous play of changing colors on these figures that can be imagined. The main jet throws a stream more than two hundred feet high, and about it are more than one hundred orifices. Twenty-two searchlights are used. The possibility of combinations and variations of light-effects suggested by these facts dimly hint of the splendid spectacle.

LATIN AMERICA AT THE FAIR

WE are yet grossly ignorant of South America; and, during our long period of home-keeping trade, we have neglected the markets there that must inevitably be ours. Nor do the people of Latin-America know us. It was opportune, then, that this Exposition should lay emphasis on the unity of interests of the whole American Continent, from Canada to Chile. Very properly and happily the architectural suggestion is Latin-American. And the time for emphasizing our community of interests was the more opportune for political reasons. Our war with Spain may for a time have caused in Central and South America a misunderstanding of our purpose. It was perhaps not unnatural that for a brief period the fear may have got abroad that we might take a mood of foreign conquest—an idea that was repeated in certain European quarters and even at home by unbalanced and irresponsible men and journals. There never was a more absurd idea. But it is a happy time to make a natural occasion to emphasize the peaceful community of interests of all American countries. The hope of an early cutting of an isthmian canal makes such a reminder of a community of interest still more opportune.

The most important of the Latin-American states have within a recent period entered an era of more stable government and of great trade expansion. The period of frequent revolutions has passed. Boundary disputes are now settled by arbitration. Their trade is expanding. The Argentine Republic for instance, where our agricultural machinery has been introduced, exports 35,000,000 bushels of wheat and more than 15,000,000 bushels of corn every year; and 13,000 mutton sheep are sent to Europe a day. A country of such rich grazing and agricultural resources is becoming a most valuable market. American capital is finding increasing opportunities for investment, in railroads, in mines, and to a very considerable extent in plantations.

As Mr. Emory shows in his review of our trade with the Central and South American states, published in this number of this maga-

zine, its growth has been slower than it seems it might have been. One reason is that we have so kept our eyes on the home-market that we have not given close enough attention to the peculiar needs of these markets. The expansion of our horizon and of our commerce —and of our common sense and of our sympathies as well—will extend our knowledge and improve our habits in this matter. One of the chief reasons of the European cultivation of these markets while we have kept at home is now likely to be removed—Europe has had the carrying trade. Another reason has been our indifference to their peculiar needs. But we are learning the business of exportation in a scientific way. A paper manufacturer has an exhibit at Buffalo of his wares packed in bales so as to prevent damage by a tropical climate and so as to be transported on mule-back without repacking. Some of his European competitors have long had a market of considerable value because they learned these simple lessons first.

A hundred such lessons will be learned at Buffalo; for the Central and South American exhibits and the information they give are exceedingly instructive. Cuba, San Domingo, Ecuador, Chile, Honduras, Mexico, have separate buildings, besides exhibits in the main building, where in fact practically every one of the Central and South American states are represented, some of them, notably Chile, making a very costly and instructive display. Most of the exhibits are of course of natural products. A serious student will find in them many suggestive and instructive sources of information about the lands and the people to the south of us.

But more important than any specific exhibits or any particular information about resources or products is the general lesson that the Exposition will teach the people of these states and will teach us concerning our community of interest—a community of interest broader than a condescending trade-relation; for it is based on a friendship that is not merely commercial in a narrow sense, but in that large sense in which commerce becomes an agency of civilization. Such a relation implies their peaceful development and an extension of trade for both them and us.

The influence of the Exposition will be the greater because Mr. Buchanan, the Director-General, was our very efficient minister to the Argentine Republic; and his acquaintance is

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esting part of the spectacle at Buffalo. Expositions in their gradual evolution from the severely instructive type, which was represented by the Centennial at Philadelphia, have become play-places, places to which we go in a holiday mood, to see instructive things of course, but especially to see beautiful spectacles.

At Buffalo the people linger outdoors; they come in greater crowds in the night than in the day. They come in family groups, men, women and children, in parties—young women, workingmen, members of bicycle clubs, teachers—every type from all grades of life, from every part of the country, orderly, prosperous, intelligent, curious, full of good nature. They throng the courts, they fill the Midway; they examine the big guns; they read the Declaration of Independence; they study the map whereon the position of every naval vessel is shown; they visit the Indian village and talk with the chiefs; they cheer the sports in the stadium; they examine the great locomotives; they look at the blooded cattle; they study the charts which show educational progress—nothing is lost on them. They gaze at the splendid tower of light with child-like appreciation; they listen to the bands; they take photographs; they make notes; they buy souvenirs; they ride camels; they make new acquaintances. There was never such a sight under heaven as the people themselves. They gaze at the crowds, never finding a monotonous hour. And they seriously study new inventions, new processes, strange products. Given a splendid spectacle, with an instructive background, and given a cheap railroad fare, and such intelligent, wholesome millions of people flock from our great populous areas as were never seen before, nor in any other land. And they are themselves the crowning glory of the spectacle.

THE MECHANICAL WORK OF THE FUTURE

THERE are two great facts of revolutionary significance that this Exposition emphasizes—facts that work a distinctly new era in industrial progress and that make a deep impression on any intelligent visitor. One is the substitution of electricity for steam. The other is the extent to which machinery has taken the place of hand labor.

No layman can see the noiseless and smokeless running of machinery (wholly without steam power) and fail to feel more sharply than he ever felt before the practically universal use, certainly in all light industries, of electricity as power. It impresses you by reason both of its various applications and of its splendid scenic effects. If you ride to the grounds on a street car or in an automobile, it is the power of Niagara that propels you. It is Niagara that illuminates the grounds. It is Niagara that supplies the current whereby you hear the roar of its own cataract twenty miles away. Then the variety of applications of electricity that are suggested by the exhibits in the Electricity building and the prodigious power suggested by some of them indicate that the Age of Steam is passing. We move forward now into the Age of Electricity.

The other revolutionary fact that has an equally important industrial significance is the various and very wonderful extent to which machinery has been developed to lessen handwork. The time seems near—to speak in general terms—when men will no longer need to do anything with their hands as instruments of strength. The tasks of toil may nearly all be done by machines. In the ideal completeness of this adaptation of machinery, man will be emancipated from mere muscular labor and have his hands and time free to do only the tasks of skill. Work that is mechanical will become machine-work. This is a revolutionary step in human history.

Our rapid rise to the front of manufacturing nations is in great measure the direct result of our extended use of machine-tools. It is American genius in devising machinery that has given us this supremacy in cheap and rapid production. Of course the same type of industrial man that makes the machine must also manage the machine. But the point is, that in almost every kind of work, that has been properly organized, the capacity for production has been enormously increased and the cost of production lessened by the ingenious adaption of mechanical power. And the amazing extent to which this has been already carried is shown at this Exposition as it was never shown before.

Given a Yankee and a waterfall, and by the transmission and storage of electricity and by his ingenuity in tool making, he can do any mechanical task under heaven better, faster, more cheaply, than it was ever done before. This is the industrial vindication of democracy; and it is fast bringing new social and intellectual, as well as industrial, conditions.

THE PAN-AMERICAN EXPOS
A WORK OF ART

BY

CHARLES H. CAFFIN

WHETHER or not it be true that the commercial *raison d'être* of Expositions is nearly worn out and that they are becoming more and more occasions of celebrations and pleasure, it is unquestionably a fact that art is being increasingly relied upon to add to their attractiveness. The tendency is so predominatingly emphasized at the Pan-American, that I will venture to say it is primarily an Art Exposition; the most notable exhibits being the architectural and sculptural treatment of the grounds and buildings and the paintings and sculpture in the art gallery. Further, it is almost exclusively an Exposition of United States Art. Canada has sent some paintings and a few pieces of sculpture and there are some examples of a Peruvian painter who, however, is practically a Parisian. Beyond these few exceptions every architect, sculptor and painter represented belongs to this country. Accordingly we have an opportunity of estimating the progress and excellence of American art under conditions more than usually favorable. For the Directors of the Exposition unreservedly determined to make the ensemble an artistic one and give a free hand to the artists entrusted with its accomplishment, while artists generally and many owners of works of art have loyally contributed to its success. My attempt in these columns is to summarize briefly the results in architecture, sculpture and painting; not only in their separate evidence but in their relation to the general progress of the country.

The action of the Board of Architects under the chairmanship of Mr. John M. Carrère was, as I have said, restricted, apart from financial considerations, only by the nature of the site. This was comparatively small, being about a mile in length and half a mile wide; a flat stretch of ground without any natural attractions, except for the strip of Buffalo Park which adjoins it on the south. The beautiful

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Mr. John G. Howard in his Electric Tower has embodied the essential principles of the office building. So the ensemble epitomises the two-fold problem of American architecture—the suitable adaptation of traditionary motives and the gradual evolution of a style conformable to the new and essentially local requirements of this country. It marks, also, another stage in the progress of American art. Seriousness was the motive at the Chicago Exposition, gayety at this one. It is the natural order of evolution. There was a time when the type of the classic temple was freely resorted to as if it represented the only impressive one. Now our architects have mastered their art until its principles are plastic in their hands, to be used and modified and readapted according to the special requirements of the occasion, so that they can dare to be playful without sacrifice of dignity. The buildings around the great courts at Buffalo, some more than others, but all in their degree, illustrate this. In the aggregate they are certainly impressive, and yet they have an audacious vivacity which is individually charming and thoroughly in spirit with the festive purpose of the Exposition. But, let it not escape attention that the vivacity, for the most part at any rate, is kept well within the limits of refinement. It is not vulgar fooling but an elegant "comedy of manners."

One should notice also what an exhilarating sense of space and distance is appreciable: much less the result of magnitude than of excellent planning of the whole and balanced relation of the parts. The ensemble is full of suggestion of what may be done with open spaces in our cities, when our pride is fully awake to the desirability of making them beautiful. We miss the profit of such an Exposition, if we merely fold our hands and remark upon the pity that so much beauty should be ephemeral; the proper reflection being that as the World's Fair has had a mighty influence upon national taste and sensibly improved the character of important buildings erected since that date, so the Pan-American may bear fruits in a livelier sense of the need of municipal embellishment.

This opens up a consideration of the sculpture which plays so important a part in the *mise-en-scène* at Buffalo. It may have been overdone in quantity and some of it may not be quite acceptable, while a greater profusion of foliage might have helped to merge it with the architecture. On the other hand, one must not forget the shortness of time involved in its preparation or the fact that the temporary occasion did not warrant a prolonged study in the designing of each piece. Detailed criticism apart, there can be no question of the general nobility of the vistas spread out before one and the sense of exhilaration and joyousness which they afford; nor is any argument needed to prove how desirable it would be, if our great cities presented some such focal points of grandeur and human interest. For the latter point deserves particular mention. A story runs through the sculpture; each separate bunch of groups representing some theme of national development and each unit unfolding a chapter in the story; and it was very interesting to note how the visitors were attracted by this and would linger to study the individual characterization. The practical suggestion of the display is not so much its desirability, which few will question, as the necessity of organic design and of the coöperation of architects, sculptors and landscape gardeners in its development. It is a very different thing from merely sprinkling a city with statues. For one thing, it is a vastly more expensive matter, though such municipal embellishments have been proved to pay for themselves eventually in the increased values of adjacent property. But this is an age of great gifts for educational purposes, and here is one way, not the least effective, in which a public-spirited man could contribute to the education and happiness of his fellow citizens and to the perpetuation of his own memory.

There is one piece of sculpture at Buffalo which calls for special mention. It is a cast of the permanent equestrian group of General Sherman which has been executed for Central Park, New York, by Augustus St. Gaudens. It was exhibited last year at the Exposition in Paris and amid the prevailing cleverness of the French sculpture and in comparison with one or two examples of extreme dignity, held its own unmistakably. Characterized by a noble elevation and a rare balance of vigorous assertion and persuasive grace, moreover in its conception and treatment as free from academic restraint as it is from naturalistic license, it reaches a plane of excellence on which there are few contemporary rivals. Indeed, so far as American sculpture is concerned, it is only to be compared with other works by the same

sculptor and, many will agree, represents the highest point he has yet achieved. Need I add that many years have gone to its creation, Mr. St. Gaudens refusing to submit to the usual American conditions of "turning a thing out" under contract to deliver at such and such a date? The present site of the group in front of the Art Gallery brings one to a consideration of the paintings.

In brief, it is scarcely to be questioned that this is the best collection of American pictures ever yet presented in a single display. For this many acknowledgements are due. Primarily, the result is a testimony to the knowledge, tact and executive ability of Mr. W. A. Coffin, the Director of Fine Arts. But he was backed by the Exposition directors who accorded him the fullest possible liberty of action, and loyally supported by the artists generally and by the owners of pictures, both private collectors and institutions, so that the success is one for all-round congratulation. Moreover the building, though small, is very convenient and well lighted, and the pictures, hung under Mr. Coffin's individual supervision, are seen to great advantage. He has adopted, as far as possible, the plan of disposing each painter's work in separate groups, which makes the study of them more easy and interesting, while it adds to the general harmony of effect. Nor has he hampered himself with the attempt to get together the best possible exhibition of American pictures. In the first place, he was bound to make it fairly representative, which necessitated the introduction of an elastic standard of merit; a policy that reflects the different phases not only of the art itself, but also of the attitude of the public towards it. Thus a story was current in Buffalo of a well known clubman who returned from the opening of the Art Gallery in a fine state of admiration, which reached its boiling point of enthusiasm over a certain picture that many people would be glad should have been excluded. You will say, it was a mere matter of taste; and to a certain degree it was, but much more a matter of knowledge. This gentleman did not know what to look for in a picture beyond the mere incident represented, and the painter of the picture in question was one of narrow training and limited experience, who regards the telling of a story as the chief, if not only, function of painting; so they met on a common ground. They represent, respectively as layman and as expert, the compre
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THE WONDERFUL STORY OF THE CHAINING OF NIAGARA

BY

ORRIN E. DUNLAP

ONE of the marvelous feats of mechanical work ever done in the world—perhaps the most wonderful—is the chaining of the power of Niagara.

Only a few years ago the plans of the late Thomas Evershed went begging for capital. His was the daring conception to harness Niagara. But it so far transcended previous experience that men were shy. At last, however, a little more than ten years since, ground was broken for the big tunnel, with which a beginning was made, and now there is more electricity generated in the great power house than under any other single roof in the world. This power-house is a magnificent limestone structure over 450 feet long, the main portion of it covering a wheel-pit which has a depth of about 179 feet and a width of about 19 feet. Near the bottom of the wheel-pit 10 turbines, each of 5,000 horse power are installed, each turbine being connected by a steel tube, 166 feet long, to a generator in the power-house above. Each of the ten generators has a capacity of 5,000 electrical horse-power, making the total product of the power-house 50,000 horse-power.

The water for the operation of the turbines is diverted from the upper Niagara River about one mile above the falls by means of a canal. The normal depth of water in this canal is 12 feet. From this canal the water flows into penstocks, which carry it to the turbines near the bottom of the pit. It is the upward rush of the water through the wheels that gives the power. When the water has moved the turbine it passes into the tunnel, or tailrace, which carries it to the lower river in the gorge, at a point a short distance below the upper steel arch bridge and the state reservation. Its form is that of a horseshoe. It is lined with brick from end to end. In the route from the wheel-pit to the lower river, the tunnel passes under the city at a depth of nearly 200 feet.

The 50,000 horse-power developed in this station completes the intended installation of the power-house. The tunnel, however, has a capacity for the development of over 100,000 horse-power, and on the inlet canal opposite the present station, a new wheel-pit and power-house are being built. In this second pit eleven turbines, each of 5,000 horse-power, will be installed, each turbine to be connected to a generator of 5,000 horse-power capacity, making the total output capacity of the new power-house 55,000 horse-power, or a grand total of 105,000 horse-power in the two great stations. The turbines in use in the present pit are double wheels, but in the new installation a notable change will be made in that the wheels will be single, of Francis, or inward discharge type, and will work under a head of 145 feet. Between the new and the old pits there will be a connecting tunnel 130 feet below the surface, from the turbine deck in each pit, and will be for the convenience of employees.

The Pan-American Exposition is getting 5,000 horse-power of the current generated in power house No. 1. This amount of energy is the product of one of the great generators. There are six copper cables, or two three-phase systems, each of the copper cables having 19 strands. The aluminum cables are strung on a separate pole line on which there are three cables, or one three-phase system. The aluminum cables have 37 strands each, their circumference being greater than that of the copper cables. All of the cables are bare. The two pole lines travel side by side over a 30-foot right-of-way half way to Buffalo, where they diverge and take individual routes of the same width, the aluminum line saving three miles of construction in the distance to the terminal station on Niagara Street, Buffalo.

In this terminal station the potential of the current is reduced to 11,000 volts, and the current for the Pan-American Exposition

passes over a special transmission line of six cables to the Exposition grounds. In a small building erected on posts, close to the west fence, is located the water rheostat, through which all of the Niagara current used on the Exposition grounds passes. It is this rheostat that controls the illumination of the night time and makes it possible for a gradual turning on of the gorgeous illumination. The rheostat consists of three tanks, each three feet wide and deep, and seven feet long, the three holding about 1,400 gallons of water. A small motor operates a worm gear, which puts in motion a shaft around which is wound a rope attached to hinged knife blades about six feet long. As they are lowered these knife blades make contact with the water, the resistance being gradually diminished to full metallic contact, when the lights glow at their full brilliancy.

Passing through the rheostat, in its usual course, the electric energy of Niagara is conducted by cables which now run underground to the Niagara transformer station in the northwest corner of the Electricity Building, where the transformers, 18 in number, with one in reserve, reduce the voltage to 1,800, at which it goes to the various distributing points for use about the grounds for light, heat and power purposes, its voltage being still further reduced at various points by smaller transformers. No matter what effect it is that you see of the presence of the electric power, trace it where you will, the source of the energy will be found miles and miles away down at Niagara Falls, where night and day, year in and year out, the mighty turbines and mammoth generators whirl in sympathetic motion, making 250 revolutions per minute. Standing right in front of the Niagara transformers in the Electricity Building there is a great ring of steel designed as a field ring for one of the generators in the new power-house at Niagara. It is over 11 feet in diameter, and made without weld. When looking at it, it is interesting to know that it would not burst until it had attained a speed of about six miles a minute, a speed which the hydraulic machinery that will whirl it cannot attain.

Never before has there been an exposition where the supply of electricity was practically unlimited. This supply of electric energy is a stupendous feature of the Pan-American, and the men who have had its building have been able to apply it most cleverly, well

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No previous fair was ever held where so much electric current was used for producing effects in connection with amusement features. Nearly every "show" on the Midway is more or less an electrical show dependent upon the transmitted energy of the Falls. In the "Trip to the Moon" it puts the wings of the air-ship in motion; produces the breezes during the aerial flight, and permits the introduction of thunder and lightning effects with startling reality. In the "House Upside Down" it tones the lighting to permit the illusions. In "Dreamland," too, the current aids in the illusions; and the launches on the Grand Canal are electrically operated.

There are many other wonderful things that Niagara power does in the buildings and about the grounds. It illumines the weird grottoes beneath the Triumphal Causeway, in a word, in strong or in gentle ways, the power of the great cataract is diffused everywhere.

When considering all this, thought returns to the bottom of the great wheel-pit, where the turbines revolve with lightning rapidity, giving motion to the generators that create the electric current. One pictures the long lines of copper and aluminum cables stretching out across country, through village and city, hanging motionless, with nothing visible to tell the story of the task they are performing; but they transmit an amount of electric current to Buffalo and the Exposition, which, it has been calculated, an army of 600,000 men performing the hardest kind of physical labor, could not do if they could keep steadily at work. If every able-bodied man in Greater New York were working together turning a crank, they would not equal the power to be developed in the two stations of the Niagara Falls Power Company; and they could work only eight hours a day, while the great current there flows forever.

SHORT STORIES OF INTERESTING EXHIBITS

BY

ARTHUR GOODRICH

AFTER all the *raison d'être* of the Exposition is that it is, as one official has remarked, "a new edition of a world encyclopedia," widely illustrated. The general lessons of the mechanical exhibits are these—that machinery is making rapidly what hands used to make slowly; that electricity instead of steam is operating machinery, and that faster trains and boats together with new electrical inventions are constantly increasing channels of communication. Moreover, as a people, we know how to spend and save money with equal good sense and thus we invest wisely in new mechanism.

As far as mere area of ground covered, size of buildings and extent of exhibits, are concerned, the Pan-American Exposition can in no way be compared with the World's Fair at Chicago in '93. One department which has to be satisfied with less than fifteen thousand square feet of space covered five hundred and fifty thousand feet at Chicago. But all has been so well chosen, classified, grouped, condensed and arranged, that its value is not lessened by its limited area. The large things are made to stand out forcibly and the smaller things are either made secondary or left out entirely. Condensation has been learned. In the exhibit, for example, of the New York Tenement House Commission three small models and two groups of pictures suffice to impress upon the mind the difference between a healthy tenement and one that is not healthy; and the fact that a thoroughly satisfactory tenement can be built, furnished comfortably, and rented at a small sum, and made to bring good profit is shown as well as if the exhibit were elaborate. More could not have been done in a space fifty times as great.

There is scarcely an exhibit which does not show a change in process or increased excellence of product over those of the same sort at Chicago eight years ago. In many cases the change is marked, and everywhere there is the indication of steady advance towards perfection of detail. Every opportunity has been seized to throw into strong relief the important changes which the last few years have wrought. For instance, the Spanish War brought into new prominence the whole subject of ordnance, and as a result there is an entirely separate ordnance department at Buffalo. One whole building is devoted to the graphic arts, and another for a workshop because of the strides that have been made in printing, engraving and the kindred arts within the last few years. And forestry has a separate picturesque log building of its own. All the structures are light and some are adequately decorated.

EVIDENCE OF MANUFACTURING ADVANCE

SMALL factories in New England and along the eastern coast were the beginning of the striking advance which has given the United States its industrial supremacy. These mills, growing to immense size, still had the difficulty to meet of being distant from the sources of raw material. So the industry spread to the central west, the Pacific coast and at last to the south. The exhibits in the Manufactures Building represent an entire country of factories, although the eastern states by their early start and by their use of improved automatic machinery have the greater number of displays.

The last few years have brought improvement of detail rather than striking change in manufactured products. For instance, the old-time bookkeeper's place is taken in a measure by a cash register which accounts for individual transactions, adds up the total of the day's sales and keeps a record by means of separate drawers of the sales of each of a dozen clerks with mechanical accuracy. The modern typewriter is fitted with many new devices. The writing surface unrolls in sight of the operator. Paragraph beginnings are located automatically. Mimeographing is regulated by an inobtrusive switch. Everything possible is done automatically. There are machines for fast commercial use and others for slower private operators.

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$70,000 and that small jewelled pieces costing half that sum can be made by any company, without order, has no particular interest except that it shows the dealers' faith in the ability of the public to spend money. No dealer would have dared to do this at the time of the Chicago Fair. American carpets are decorating regal rooms in Europe. Blown glass is being used for vases, bowls and lamps. American sheet glass is going to all the world and iridescent stained glass is being made, through which, with all the added body of color, the light sifts almost as brightly as through a transparent window glass.

This inner court indeed means more than the mere display of costly products. It shows the development of the American craftsman, the union of the artist with the artisan.

MANUFACTURING PURE FOOD

The food exhibits, also in this building, are of some interest other than an advertising one. From the latter point of view they are pre-eminently the best inside the buildings. The prepared foods are reaching a high level. Cleanliness, accompanied by a liberal use of water, proper chemicals and wherever possible automatic handling instead of by hand has been a feature of the progress. One well-known breakfast food, for example, has its original grain boiled and grated into a condition of entire purity, baked twice and made into its soluble shape without the touch of a hand upon it. Only in packing is it ever handled. The same care is observed in the factories where meats are canned, and this is made all the more vigilant on account of the strict government inspection of meats which has lately been in effect.

In the Liberal Arts department are the new piano and organ players. These mechanical music-makers are being made more and more capable of producing artistic effects with the best music. The most striking new achievement shown is a piano player which plays the entire eighty-eight notes of the piano, and upon which the effect of four-hand playing can be obtained.

SANITATION

The new movement toward founding Consumptive Hospitals comes under the sub-department of sanitation. Germany was the first to set aside homes for victims of this disease. It has nearly a hundred hospitals, and a capacity for about five thousand patients. The government and private charities have both helped to support these hospitals and life insurance companies have found it convenient to be able to send insured people to the hospitals, where they are sure to have the best possible treatment. England and France each have sanitariums with a capacity of slightly under three thousand patients and in Russia and Italy, Norway and Denmark, there are already hospitals and promise of many more. Similar sanitariums have been established in Austria and Hungary, and in Portugal the Queen has recently given a large sum of money for the establishment of a tuberculosis hospital. Our government has sanitariums in New Mexico, particularly for patients from the army, and there are private sanitariums in several of the states. In Massachusetts the state itself has appropriated $150,000 for the establishment of such a hospital.

A series of pictures explain a process which is being carried on in many Massachusetts towns, including Brockton, Southbridge, Spencer, Framingham and Andover, of turning sewage into the most practical and perfect agricultural fertilizer that has yet been discovered. From that it is but a step to the Agricultural Building next door.

THE TRANSFORMATION OF THE FARMER

SYSTEMATIC and scientific fertilizing has worked great changes in the farm products of the last years. The model of the squash in the Government exhibit, which in its growth is lifting three heavy iron anvils is a fair witness to the strength of the plant which good fertilization is growing. And it is saving good land. The corn belt doesn't move with the new harvests because the land is worn out. Properly fertilized it is as good as virgin soil. The farmer is learning how to meet drought.

But the last years have been momentous in many ways to the farmers. They had been traveling along in the old accustomed routine, doing things in traditional ways and making less of a living yearly At last the end of sufficient profits came. It was merely a question as to whether the farmer would become modern or give up doing business. The result is that he has become both a scientist and a business man. He has grown to know the meaning of the work he is doing, and he at last realizes that he must make his products attractive if he would sell them. Small farms and special

planting have come into vogue. Truck-farming is being done near the cities. Careful forestry is reclaiming arid lands, and throughout the waste places of the west irrigation has already worked a revolution, with marvelous advances possible in the future. Here, too, machinery is taking the place of hands, and the steam plow is doing noisily the work of many men. But before the great West is developed the little farms of the New England states and of the whole Eastern country, deserted now or being used with little effect, will fall in line with the new era in farming. Already the impetus is being felt. An added force which will push the development of the western agriculture to its highest point is the new door which is opened by the growth of Pacific trade. Minnesota alone is shipping eighteen million dollars worth of American products to Japan, and twelve million dollars worth to China.

THE FARMER'S INSTITUTE

Perhaps the most important lever which has been used to lift the farmer into his new estate is the so-called "Farmer's Institute", which is carrying the results of scientific teaching from our universities and colleges into the agricultural sections. It is a medium between the government agricultural stations and the outlying farms. In New York, Wisconsin and Minnesota particularly, this movement has grown to great proportions.

In New York alone last year there were three hundred and eighty-four conventions, many of them lasting two days. And it is safe to say that meetings were held on a total of six hundred days. Over twenty thousand men from farms were told in compressed, attractive fashion the things they most needed to know about their work, and the ability of the men who told them can be judged from the fact that a majority of the men who are officially connected with agriculture, horticulture, floriculture and dairying at the Exposition are Farmer's Institute men. The remark that "the farmers are learning that profits are better than tradition" accounts for the success of the Institute movement.

A MODEL DAIRY

A striking example of the development of modern farming is the model dairy which is in operation on the grounds. For six months five selected cows of each of ten well defined breeds are being
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instruction of a certain sort and for advertising. But it has a last and most practical use. A complicated bit of machinery might be described for an hour, and nothing like the clear knowledge would be gained by the listener that he would get by watching the machinery work in a mutoscope. A man cannot purchase a locomotive or a derrick or a road-roller without seeing it in action. Here is a method which can save much time. A mutoscope made for this use can be carried with as much ease as a camera, and the man for whom it is intended can make the pictures fly as fast or as slowly as he wishes. He sees the prospective purchase in action just as well as if he takes a three or four hundred mile trip and watches the original do its work.

PICTURES BY WIRE

To telegraph a picture to New York from Washington so that the picture is successfully reproduced in a New York newspaper on the same night seems beyond belief, but it has been done by a new fac simile telegraph. The process is a comparatively simple one. A zinc enlargement is made of a half-tone reproduction and the depressed portions are filled with melted sealing-wax—a non-conductor. The surface is scraped smooth and the plate is bent around the cylinder of the transmitting machine. A stylus is made to glide over the plate, making or breaking the circuit as it meets the metal or the wax. On a sheet of common paper curled about the cylinder of the receiving instrument, hundreds of miles away, a fountain-pen traces the work of the stylus. The two machines are made to work in accurate unison. The picture is sent quickly, the rate of speed being an inch a minute, or the entire picture, if of cylinder length—eight inches—in eight minutes. If the picture is coarse and half the number of lines are required it can be sent in four minutes. The space occupied by the picture could be filled by a verbal telegraphed message in the same time. Allowing forty minutes for the making of the zinc plate, ten for transmission, and thirty for getting the reproduced picture ready for the press, the picture can be printed in the newspaper office in a little over an hour and a quarter after the plate is received at the transmitting machine. Machines for duplex transmission, by which the same instrument both sends and receives a picture simultaneously, are being constructed, so that by two such machines four pictures can be sent at once over the wire. This will of course reduce the time of each one fourth.

TYPEWRITING BY ELECTRICITY

Electricity has come to the aid of the typewriter operator. There has always been an atmosphere of weariness about type-writing room of a business house, for the operators have been compelled not only to guide the instrument but to use physical force to make it perform its work with accuracy and uniformity. In the new electrical machine the work is done by electric current acting through a magnet—spacing, type-bars and ribbon being all operated by it.

The operator plays upon it as on a piano. The keys dip one third as much and the pressure required one-tenth as much as the traditional machine. He need not worry about gaining uniform touch. Electricity does that for him. Nor need he take his fingers from one key before pressing down the next. He can give his time entirely to speed, and in that, too, the current helps him, for he can space simultaneously with the last letter of each word, saving an action a word. The time formerly taken for releasing each key is also gained. The light action makes it possible for him to use all his fingers easily on the keys. In manifolding the electricity simplifies the process. Instead of pressing the keys with additionally hard stroke he has only to set the handle to allow more current to energize the magnet. A dozen copies can thus be printed with the ease of one. The printing is always uniform. Better work is done more rapidly, and it seems that typewriting need be health-wearing drudgery no longer.

WRITING A THOUSAND MILES AWAY

The telegraph is entirely adequate for short messages and the telephone for longer conversational use, but both have limitations. Neither is entirely private. The telegram is written and signed by the operator. It has been through a number of hands, and is only a transmission of sound and signs. The telephone does not always make the voice thoroughly recognizable to the listener, and in business transactions it is, like any conversation, of no legal use unless properly witnessed or registered in writing. A machine that will convey a message in the writing of the sender, so that the receiver reads as fast as the

sender writes even though they are separated hundreds of miles, would certainly fill a distinct and valuable field. In 1889 such a scheme was suggested and a tentative machine was made. Then followed years of experiment and expenditure without satisfactory results. In 1895 the proceedings of a convention of Republican clubs in Cleveland were reported by the instrument to the Chicago papers, but still the apparatus was commercially unready. A certain arbitrary speed must be learned and kept if the message was to be exactly reproduced. This, of course, alone would keep the machine from common use. This year, however, a thoroughly practicable instrument has been devised, after years of struggle and waiting. And the perfected "telautograph" is simple of construction and apparently durable. A common pencil held by steel rods, which have the appearance of an old-time well sweep when at work, is used to write the message, and by the varying force of the current used in the different positions the pencil takes in writing the words, a drawing pen, held in a precisely similar manner, automatically duplicates the writing at the receiver's end. The instant the pencil is pressed upon the writing surface electrical connection is made and the pen at the receiver is drawn down to the paper. By electricity too, the paper is made to slide along into place for a new message uniformly with the paper on the transmitting instrument. Complete, it is small, inobtrusive and easily transferred.

The various uses to which this thoroughly practical machine can be put are numerous and important. The other day an order was telephoned to a broker to buy a block of a certain kind of stock. He did it. The stock fell and there was a loss of six thousand dollars. He sent a bill to his customer, and the latter flatly denied having ordered the stock. The broker could prove nothing and the six thousand dollars came out of his pocket. If the broker had received the order on a telautograph he would have had a definite message and signature to fall back upon. If a draftsman away from home, say in Philadelphia, wants to submit a rough drawing to his employer in New York he can save a day over the mails. An instrument like this should reduce train despatching to absolute accuracy. A mistake over the wire when the message goes through a number of hands is

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the copy better and faster than a force of compositors. It even sets the matter in pages about cuts. It will set type at an average rate of five thousand ems an hour. The average compositor will not set more than one thousand ems, to say nothing of the time lost in wearisome distributing of type to their proper cases. It will set one thousand ems for an average cost of twelve cents. Old-time setting of the same amount would cost forty-five cents. More than this, it sets, spaces and corrects better, and gives a printing surface ready to the higher class of press work. The author has only to turn typewriter to be his own printer.

SIGNALS AT SEA

Nor does the patent office furnish all the evidence of practical advance in the Government building. Lighthouse apparatus and devices for the prevention of disaster at sea make a most interesting corner. A bell-buoy has the disadvantage of ringing only when the water is rough enough to rock it into ringing. A horn has been made that costs no more than the bell-buoy. It is a simple, conical siren with a piercing, mournful note, which is blown by a two horse-power kerosene oil engine. The air reaches the siren by means of a small blower at a pressure of four ounces. Its advantages are that it is cheap, its sound is penetrating, and that it blows at intervals which are in no way regulated by the rush or the calm of the sea. But sounds at sea are difficult to locate even with clear weather, and in a fog the note of the horn might seem to come from a totally different direction from the right one. To obviate this difficulty a siren was made with eight megaphones pointed to the cardinal points of the compass and their intermediaries. A code of blasts was prepared, such as a long and two short notes for one point of the compass, one long and one short for another, and so on with the rest. The fog-blinded vessel then would listen for the signal which it heard loudest of the series, and get its direction thereby. This method was satisfactory, except that it was expensive of installation and demanded a uniform system of blasts which would be understood by every vessel. Altogether the Government has in operation about four hundred fog signals, one hundred and twenty-five bell-buoys, fifty light vessels with fog signals, and seventy-five whistling-buoys.

To further simplify and make accurate ascertaining the direction of the signals, an instrument called the topophone has been made. Two acoustic-bearing trumpets, which magnify sound, are mounted, facing opposite directions, on a vertical shaft. A rubber tube connected with a metal-bearing tube having a hard rubber ear-piece is attached to each trumpet. When the ear-pieces are pressed tightly into the ears—the right trumpet being connected with the right ear and the left with the left ear, so as to exclude other sounds—the signal is magnified through the trumpet. By turning slowly, the listener, by noticing to which ear the sound comes loudest, can, by oscillating the trumpets, quickly decide the approximate direction of the signal. Knowing the speed of the vessel and its course, he can, by keeping the instrument pointed in the direction of the sound, easily locate the position of the vessel. The topophone is portable so that it can be taken to the part of the vessel where there is the least noise. The direction and approximate distance of an echo can also be determined. Theoretically fault has been found with the instrument, but it has been used successfully in practice.

The big lighthouse lense—weighing a ton—which is to guard Toledo harbor, revolves automatically on ball-bearings an inch in diameter, and is operated by clockwork. Instead of a heavy weight forcing up oil, air-pressure is used. In the navy department is the important and novel buoy which by a phosphorus composition throws up, on striking the water, smoke in the daytime and fire at night, thus locating it for the "man overboard." Another life-buoy turns up a flag. A device which is valuable by day but useless in the dark. The Signal Corps used to communicate by the wigwagging of flags. Heliograph, wire and wireless telegraphy have greatly increased its facilities. In the Weather Bureau exhibit is a model of the galvanized steel coast tower, from which flags by day and lanterns by night tell the approach of storms. The Bureau, also, is flying kites to find out the relative humidity, temperature and pressure of the upper air. The Government Division of Chemistry has lately added a Road Material Laboratory, in which are carefully tested material for making good roads. The fisheries of the United States distribute about fifty million dollars a year among some two hundred thousand fishermen.

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THE COLONNADE CONNECTING THE GATES (PROPYLÆA), NORTH OF THE ELECTRIC TOWER
This is a screen behind the Tower

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Photographed by A. K. Dugmore

MR. PROCTOR'S "MANUFACTURES"

NEW MINERALS

THERE is a large case in the Mines building which was empty at the opening of the Exposition. It was set aside for new minerals which should be found during the six months. It is filling rapidly, and will undoubtedly be full by the closing time of the fair. There could be no more forcible proof of the great mineral possibilities of the country which are still undeveloped. Osmium, the heaviest metal yet discovered, was in little demand when used in the tips of fountain-pens, but now that it is found of use in incandescent lighting, it is becoming a very important mineral. Corundum was first brought into use a few years ago for making grindstones, and the last two years have shown enormous growth in the demand for it. The Cripple Creek and Mesabe Range mines have developed marvelously in the last decade, and in Nevada two million four hundred thousand dollars was lately refused for a ten years lease of one claim.

CHEAP FUEL

Along the banks of the upper Missouri River, there were veins of a peculiar mineral with a charcoal-like constituency. The steamboats have always helped themselves as they went by. This coal, called lignite coal, was found in great quantities in fifteen-foot veins. There is a man who had a spring just back from his house. He discovered that under it was a vein of lignite. As a result he has his water-supply and a miniature coal mine of fuel within a few steps of his door. A company was formed, and the coal was mined and sold at about a dollar a ton. Coal at such a price was a boon to the poor people of the surrounding country, but it was thought that it might have a wider commercial use. The difficulty was the distance over which it

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THE ELECTRICITY BUILDING

A part of the Colonnade of the Electric Tower on the left

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A SUNKEN GARDEN

The Electricity Building on the left

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THE TOWERS OF THE TRIUMPHAL BRIDGE
Looking West, the United States Government Building on the right

must be shipped. To overcome this a system of briquetting has been introduced, and a wide use of the fuel is at least possible. It is said to be hard to ignite in its original condition, to burn rapidly, and to leave a peculiar ash which is bothersome if not rightly handled. The great utility for lignite coal as a widely used fuel lies in its cheapness. Pictures of Cape Nome suggest the development of that mineral section; vari-colored oils bring the big booms of California to mind, and the large central case surprises us with the large variety of precious stones mined in the Americas.

DIGGING ASPHALT

Over in one corner is the exhibit of the Trinidad Asphalt industry. Living on a wooden pier in houses built one thousand feet from the shore, so as to get away as far as possible from the dreaded tropical fevers, five Americans are, with the aid of the natives, digging from the "pitch lake," and shipping away from Trinidad about one hundred thousand tons of pitch for paving each year. A pick-axe is used for cutting out the pitch in patches thirty feet square. It is then loaded on flat cars in iron tubs, two to a car and each holding half a ton. These cars are run on wire rope to the terminal power station, where the tubs are transferred to an aerial tramway and carried out to the end of the pier seventeen hundred feet long. The asphalt is there transferred into the holds of the waiting ship. A small twenty horse-power engine runs the entire carrying plant. Each tub is carefully weighed at the terminal station for customs duties. Over this thoroughly modern tramway one hundred and forty men handle often eight hundred tons of pitch a day—a very considerable advance over the old system of carts and small boats. The lake, which is over one hundred acres in extent, is a peculiar formation, seeming to be

PEDIMENT ON THE ETHNOLOGY BUILDING

By George T. Brewster

MR. KONTI'S "DESPOTIC AGE"

MR. ROTH'S "THE CHARIOT RACE" Photographed by C. D. Arnold

the crater of an extinct mud volcano filled with asphalt, with channels of a warm, sluggish water running through it.

What the Mines building seems to show most clearly by both its exhibits and its decorations, and especially when the visitor looks out from it at night upon the bright "incandescent city," is that a new Mecca is found for the raw minerals of the West and Northwest. Buffalo with its perfectly located port—to which the Sault Sainte Marie Canal opens the entire Great Lakes shipping—and with the great power which Niagara furnishes, is to be a new centre of smelting and refining industries. The movement has already begun.

GROWING NEW FRUITS AND PLANTS

THE most remarkable thing to an early visitor about the exhibits in the Horticulture building is the large display of last year's apples from the many states—New York State alone shows three hundred and forty-eight different varieties—in perfect condition. This achievement has been accomplished by a system of storage first tried at the Omaha Exposition and perfected at Buffalo. The apples were wrapped closely in oil paper, and an additional covering of common paper was added. They were then packed as tightly as possible in barrels and stored in a warehouse where the temperature was kept at about thirty-six degrees. The double wrapping gave to each apple a practically air-tight cell, keeping the apple, and preventing, in case of decay, any possibility of the decayed fruit injuring those packed around it. The last few years have shown many local developments in fruit growing, notable among which are the peach orchards of Western Colorado and large apple-growing in Idaho. More sparkling wines are being made in this country, and in this advance New York State, and particularly the district about Chautauqua Lake, is contributing largely. Gardens in New Jersey are growing a medicinal plant for which the Chinese have superstitious awe, and it is finding ready sale in the Chinese districts

THE ELECTRIC TOWER AND THE FOUNTAIN OF ABUNDANCE

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ELECTRICITY BUILDING

South Entrance

in the large cities. In floriculture the great advances have been in the growing of calla lilies for decorative purposes. The size and perfection of outline of these flowers have been improved greatly, and aquatic flowers of all sorts have been the subject of more zealous care with the growers. And landscape gardening is growing more and more a national art.

PROFITABLE EXHIBITING

Some manufacturers may consider that exhibiting at the many expositions and fairs, which are being planned and carried out, is poor advertising, but the boards of trade of leading California cities do not think so. They have made exposition exhibits a business because they have found that such exhibits bring results. They use the utmost care in packing, shipping and receiving the products they are to show. They expend money and time in preparing an attractive and comprehensive exhibit, and they have done it all so many times that they know how to handle every detail. They shipped one

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MANUFACTURES AND LIBERAL ARTS BUILDING

Looking down toward the plaza

THE PLAZA AT THE NORTH OF THE ELECTRIC TOWER

The Sunken Garden and the Music Stand in centre

Photographed by C. D. Arnold

thousand jars of fruit to Buffalo from the Coast. Not one was broken nor was the fruit of any spoiled. The results can be partly shown by the fact that California is shipping two and one-half oranges for every one at the time of the Chicago fair, and among new products, two thousand carloads of lemons, eighteen hundred of celery and eight hundred of cauliflower. In one corner are some big fish from Santa Catalina, the well-known island resort only a few hours away from Los Angeles. This is the land of true fish stories which seem like the choicest fiction of a Baron Munchausen. A black sea bass weighing three hundred and eighty-four pounds has been caught with rod and reel, and many weighing from one hundred and fifty pounds up. The best catches of leaping tuna—most exciting sport, for this fish is one of the most active of game fish—run from one hundred to two hundred and fifty pounds. As long a time as seven hours has been spent in landing one of these fishes.

A PAN-AMERICAN EXHIBIT

Circling around, from the main Horticulture Hall to the Graphic Arts building is a conservatory in which is found, perhaps, the best Pan-American exhibit of the Exposition. A most complete collection of food-plants, alive and growing, have been sent from the South American and Central American plantations. Nor is this country unrepresented. Some years ago the Agricultural Department tried to raise tea in the South and failed. Since that time a private capitalist has succeeded with a good-sized tea plantation in South Carolina. His greatest difficulty was in securing labor. The hands of adults were too stout and clumsy for tea plucking. He established schools on his plantation and educated the neighboring colored children while he used them for a limited time at work, and he has proved that tea can be raised successfully in the South. He gets a product of four hundred pounds to

Photographed by C. D. Arnold

THE NEW YORK BUILDING

A permanent home for the Buffalo Historical Society

Photographed by C. D. Arnold

AGRICULTURE BUILDING

West entrance

the acre at a cost of production of fifteen cents, which should mean a profit of about sixty dollars to the acre. Seven or eight different varieties of tea plants are growing at Buffalo. In addition there is a small coffee plantation of more than twenty trees from Mexico, Venezuela and elsewhere, and spice plants of a dozen or more varieties. Many of these will flower before the Exposition closes. The nutmeg tree will bear its fruit, of which the nutmeg is merely the seed, and mace the portion found between the seed and the flesh of the fruit. There are vanilla vines from Mexico—which bear the vanilla beans containing the seed from which comes the flavoring spice—and cocoa bushes and beans.

FASTER PRINTING ON BETTER PAPER

THE United States is at last competing with England and Germany in paper making, and in the Graphic Arts building are exhibited the finest grades of American made fine drawing, bond printing and blue printing papers. The size of paper-rolls has been greatly enlarged, condensing large shipments. One roll, the largest ever made, is shown one hundred and fifty-six inches wide. Automatic typesetting machines have cheapened and accelerated setting, and presses are larger and faster than ever before. Color-printing is a comparatively new development, and there is a machine in the workshop which prints fifty thousand sixteen-page forms of paper an hour in four colors. The daily magazine of Mr. Harmsworth's dream becomes nearer a possibility in the face of a machine which folds, numbers, stitches and covers printed magazines or pamphlets at one operation. Engraving machines work so finely that they can be made to cut a long paragraph on stone, appearing as a mere dot to the naked eye, but perfectly readable through a magnifying lens. Aluminum has replaced stone in lithographing, while three-color printing is developing to a

Photographed by C. D. Arnold

"ANIMAL WEALTH"
One of the groups by Mr. Niehaus

point where it becomes dangerous to lithographer and chromo-printer.

MACHINERY FOR EVERYTHING

THE days when a merry Autolycus could wander the highways, singing and jesting and robbing with equal grace and ease have gone long since. Pockets have given way to costly safes for money protection and Autolycus has become a scientific criminal with nitro-glycerine and dynamite. In less than a year and a half ending with the first of January there were one hundred and eighty-six bank burglaries on record with over one hundred successful. Strong safes have been utterly wrecked, generally with nitro-glycerine and with no noticeable noise. The keen drill has replaced the hammer as the safe makers have grown more expert. In many cases the safe was located in a vault, making a double entrance necessary. Electricity, theoretically, might be used to open a safe but practically, the difficulties of getting sufficient power to bore the steel, and of the light resulting put it beside the question as a possible means of attack. Thus far, then, nitro-glycerine is the acme of the burglars' invention, and there is a substance which is said to thwart him even with this. It is called manganese steel, and is a union of iron and manganese, an ore found chiefly in the Caucasus mountains and Spain, with some silicon and carbon. This tough material has been widely used in the wearing parts of rock-crushing machinery. It can be dented by a hammer, but will resist attack by a sharp drill. It has tough hardness rather than brittle hardness. It cannot be softened by annealing process. Safes are being made of this material which are standing remarkable tests most successfully. They are simple of construction and points of weakness have been eradicated as far as possible. The most strenuous tests have been impartially made and the results seemed to prove thoroughly that manganese steel will eventually be the sub-

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THE BASE OF THE ELECTRIC TOWER, ILLUMINATED

IN THE STADIUM

Sham battle by Indians

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stance used for the best safe and vault constructions. The best drills were rendered useless after making a depression altogether of about one-sixteenth of an inch. Chisels failed to chip the metal. Nitro-glycerine in good sized charges has been tried on all parts of the safe, and with no appreciable effect. Blasting gelatine dynamite such as a mob would use were exploded in three pound charges with some final effect, but the charges were too large and too many to be practicable in actual attack. It seems as if criminal ingenuity must devise more cunning means when this material comes to be widely used. Protection against burglary is getting to be a costly business. One firm has just put in a burglar proof vault for two hundred thousand dollars. For absolute protection against fire in offices where valuable papers are constantly in exchange an entire set of fire proof furniture is being made, all of metal and perfectly convenient. The Baltimore Court House has recently been fitted with this furniture.

DOING TEN HOURS WORK IN A MINUTE

For a number of years long wooden flat cars were loaded arduously by shovel with ore, coke, coal, gravel, broken stone or whatever loose materials were to be shipped from point to point, and unloaded arduously in the same way. Large capacity steel cars were introduced which reduced repairs and wear and tear greatly, and made large shipments easier to handle. Machinery came in with derricks and lifts and travelling cars to make loading more rapid and economical, and now a car has been invented which does away with the toilsome unloading. In three quarters of an hour seven men used to be able to unload twenty five tons. Now a man without manual labor can in a few seconds unload twice that amount. Mere force of gravity does the work. Adjustable steel valves or floors make it possible to discharge on either side, on both sides at once, on either or both sides of the centre, or on both sides and centre at the same time. The angle of discharge is thirty

Photographed by W. H. Lyman

FROM THE TEMPLE OF MUSIC TO THE MACHINERY BUILDING

ALT NÜRNBERG
The tower from within

one degrees from the horizontal and the openings—four of each kind to a car—are a little under five feet wide by sixteen feet long on the sides and eleven inches by sixteen feet in the centres. All of these cars can, moreover, be discharged while in motion and at any speed, and are so built in a train that one man can govern the discharge of any one, or number, or all of the cars by the aid of compressed air. In motion they will spread the load from five to thirty feet from the track, the width of spread depending upon the speed of the train. This is all done without careening or moving the body of the car. This car is naturally adapted for ballasting. The load can be spread in any or all of its various ways by one ordinary laborer, and the spreading is regulated by the speed of the train. The average car has a capacity of eighty thousand pounds. The freezing of the material carried will not delay its dumping in any way. The car has also a convertible use. Being made of steel, it can be changed in a minute into a well armored car for military operations with narrow loop-holes and well-covered defence. It has therefore a double advantage for armies in the field.

But the most striking general things to notice in Machinery Hall are that there is no overhead shafting, for electricity sets all the machinery in motion—the same Niagara power that makes the brilliant illumination at night possible—and that great advances have been made in all kinds of automatic machinery.

CARRYING COAL

A good example of the uses of such perfected machines is a belt conveyor for coal and other ores. This simple, comparatively noiseless invention which carries two hundred and fifty tons an hour for over eight hundred feet in actual practice is made most simply in two parts; an endless road belt with thick rubber covering, heaviest in the centre and reinforced at the edges so as to take the shape of a trough running on a series of grouped cast iron pulleys, three in a group. The two parts are entirely separate so that the material cannot clog the pulleys, and every detailed portion of the machinery is made by gauge by automatic machines. Wherever on the line a discharge is desired the belt doubles over the upper pulley, the material falls into a chute and the belt sliding on a lower system of pulleys returns to repeat its work. And the system

ALT NÜRNBERG
Under the walls of the German Village

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THE FOUNTAIN OF ABUNDANCE BY SEARCHLIGHT

makes it possible to discharge at any point or continuously, as into a series of bins.

SIMPLIFYING EVERYTHING

A general process of simplification of machines, of making everything by accurate gauge—thereby reproducing indefinitely and easily the smallest parts—and the use of automatic devices to reduce the amount of hand labor, has made great changes in machine working. The old time drop which was operated by the foot is now run automatically, and the workman has only to keep pressing the material which is to be shaped under the heavy weight. Steel pulleys of smaller size, greater durability, capable of speedier use and better balance are replacing the wood pulleys. Belts are treated chemically so as to cling more closely to the pulley. Rubber belting has also come into use along with the leather. The size of a drill grinder determines its proper position, saving numerous adjustments.

A new grate has been made which, by means of intermediate shears-bars, cuts away and cleans the waste from the fire. Tabulation of costs, of time used, records of piecework within a factory, are all made by automatic recorders. As for the bicycle, its rapid perfection needs small comment. Weight has been greatly reduced and durability in no way jeopardized. A cushion in the frame beneath the seat adds to the smoothness of riding which pneumatic tires brought in part, and the coaster brake has done away with the sudden stops, and the wear and tear of both wheel and nervous system which were part of the old wheel brake system. It is a far cry indeed from the heavy, rattling, hard rubber-tired, costly bicycle of a decade ago to the light, smooth-running, cheap wheel of to-day. Motor bicycles, too, are a novel development. Riding a wheel without effort at a rate of twenty odd miles an hour, and at a cost of motor power of a cent for every ten miles, has

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THE BASE OF THE ELECTRIC TOWER

Front view, showing Mr. Barnard's groups "Niagara in the Days of the Indian" (on the left) and "Niagara in the Days of the White Man" (on the right)

its charm. These machines are easily regulated, weigh about seventy-five pounds, and are in price a happy medium between the bicycle and the motor vehicles. Motor vehicles, electric, gasoline and the rest are, of course, only at the beginning of their ultimate development. Yet they are a success now—when a test trip can be made at forty miles an hour for some hundreds of miles of road. It is true that electric vehicles have to be charged often, and are, therefore, not always certain on long tours, and that gasoline tanks will sometimes set fire to the vehicle. But the new storage battery, or another new one to be hereafter invented, will do away with one difficulty, and there is a concern making nothing but metallic vehicle bodies lined with asbestos, which will neither burn, nor warp, nor blister, and are practically indestructible.

Electric machines are lighter and simpler than formerly; steam carriages have been strengthened, and gasoline are growing more reliable. The automobile was as ethereal to us a few years ago as the flying machine is now, and now its uses in war and peace, in pleasure and in work, are too many to mention.

With the bicycle came in the little mechanism which registers distance covered. Now there are over a million of one make in use. The cyclometer registers both trip and total distances; trip lengths up to one hundred miles, and totals up to ten thousand miles. A similar instrument does the same sort of recording for vehicles of all types. These little mechanisms are remarkable in construction, because their many and sometimes very small parts are all cast in a foundry. Absolutely accurate and perfect work in such small space is little short of marvelous.

NEW USES OF ELECTRICITY

IN chronicling the additions that have been made to the uses of electricity and the development of its many applications, of course the first thing that strikes attention at Buffalo is the unprecedented

Photographed by W. H. Lyman

ON THE CANAL

Showing figures of buffalo and moose on the bridge

Photographed by W. H. Lynas

IN THE BASIN OF THE COURT OF FOUNTAINS
Looking Southwest

illumination. The areas lighted are larger than has ever before been attempted, and still the success is in every particular greater and more brilliant. A quarter of a century is a comparatively brief period to review, but in 1876 an unsuccessful effort was made to light the Centennial Exposition with gas. It was not until 1883 that an exposition was successfully lighted, and this was at Louisville, by the use of the incandescent lamp. The unit used then was a sixteen-candle power; but an eight-candle power lamp is used in the illumination of the Pan-American Exposition. At the New Orleans Exposition there was a joint use of arc and incandescent lamps. Chicago came next, and arc and incandescent lamps were used. Then followed the Mid-Winter Fair, the Atlanta Exposition and the Nashville Exposition, under similar conditions. But the Omaha Exposition of 1898 afforded an opportunity to demonstrate the value of diffused light with the standard sixteen-candle power incandescent lamp; and now an eight-candle power lamp lights an area threefold as large as any exposition heretofore lighted—a spectacle never before possible.

A NEW ELECTRIC LAMP

While incandescent lighting has made marvelous strides, recent years have given us the enclosed arc-lamp, which requires no attention whatever for about two hundred hours; and then there is the series alternating current street lighting system of enclosed arc-lamps in use in the Electricity building. In the dome of the building is to be seen another wonderful development in lighting. This is the Nernst lamp, which seems to have a field between the incandescent and the arc for numerous purposes. Then, again, the Pan-American shows still another source of light not seen at Chicago. This is acetylene gas, a product of the application of electricity to a furnace in which calcium carbide is made.

Photographed by W. H. Lynas

THE EAST SIDE OF THE BASIN OF THE COURT OF FOUNTAINS
Looking South

Photographed by W. H. Lyman

THE STREETS OF CAIRO
Acrobats performing on mats

So much for the most noteworthy advance in electric lighting. But there are interesting exhibits portraying the use of electricity for heating purposes, and the decomposition of material into other forms, more particularly in the department of electro-chemistry. This is shown very extensively in many products of absolute purity, such as caustic potash, graphite, carborundum, chlorate of potash,

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DREAMLAND AND THE ENTRANCE TO THE STREETS OF CAIRO
On the Midway

etc. The electric car-heater is well known to the public. So cleverly is heat applied that it is now used in baking and browning certain cereal products. The electrical kitchen industry, as well as electrically operated hat factories, are now well established.

The transmission of power from the Falls to the Exposition is wonderful—far beyond the expectations of a few years ago. Yet electric power is transmitted over two hundred miles in California, and a map in the Electricity building shows the route of the transmission.

The Niagara transformer plant in the Electricity building is one of the wonders of the period, no such installation being thought of at the time of the Chicago fair. Silently the grim-looking transformers perform their work, receiving the transmitted electric energy at a

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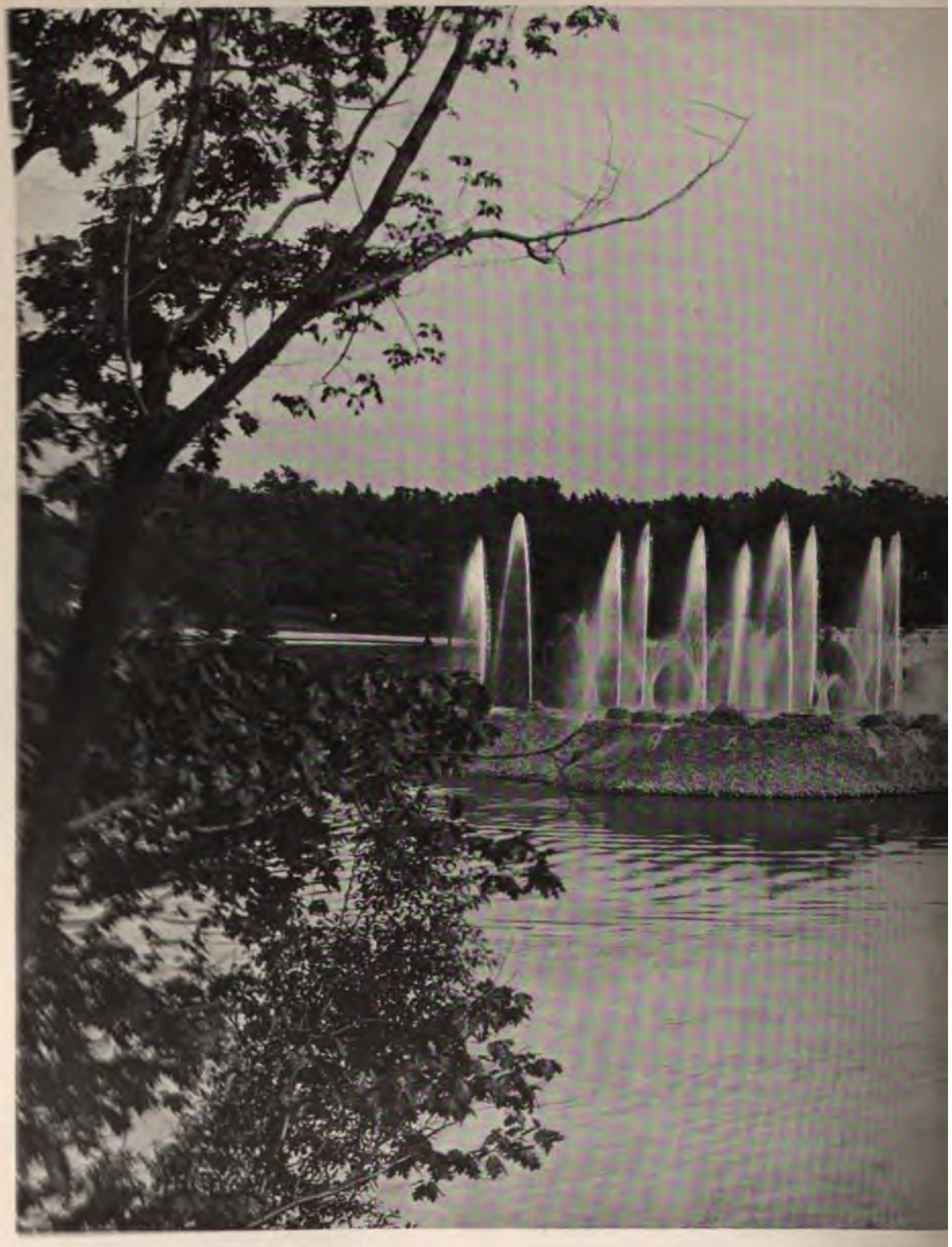
OUTSIDE FAIR JAPAN
On the Midway

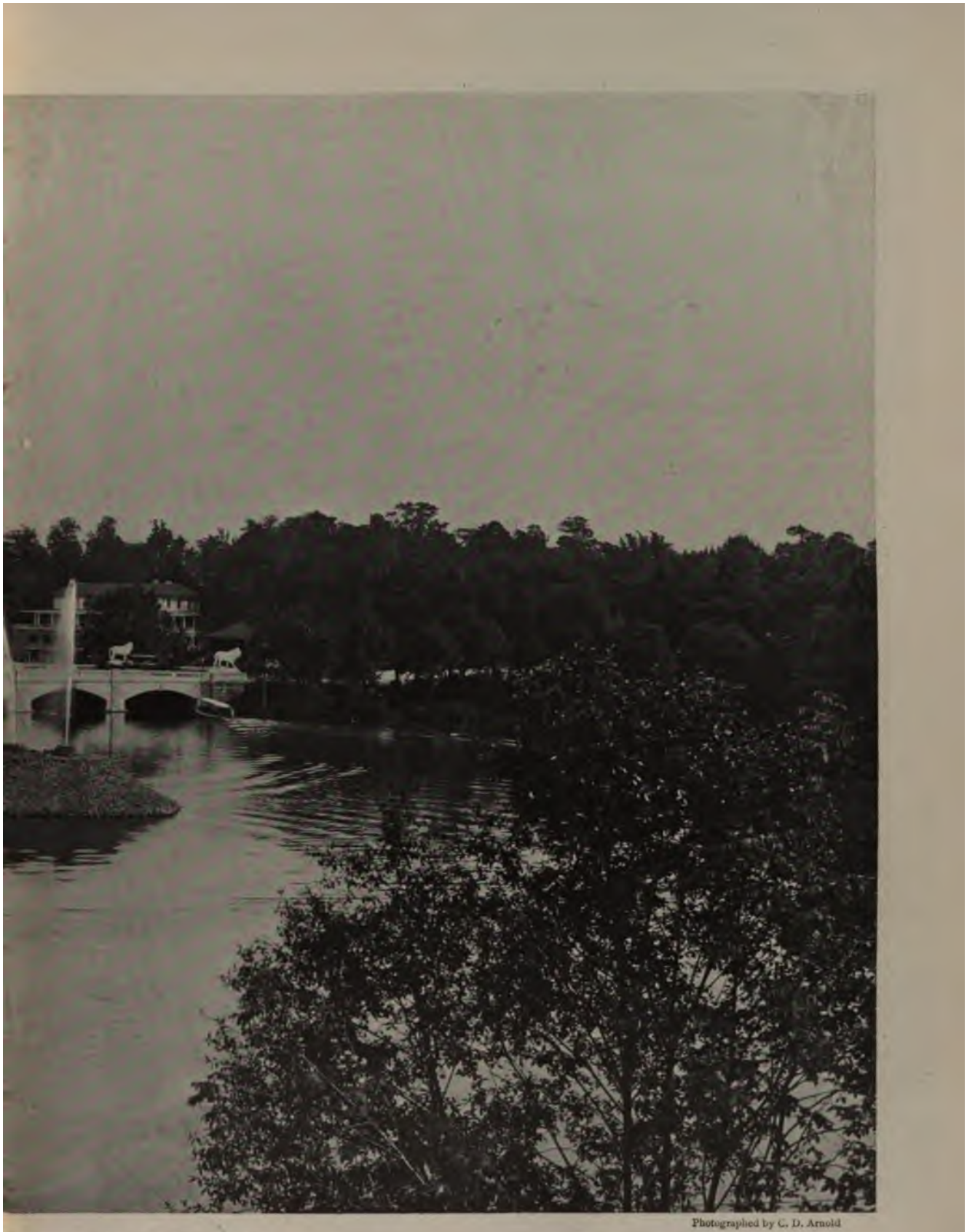
voltage of eleven thousand, and reducing its potential to eighteen hundred volts, at which it is distributed about the grounds.

ADVANCE IN TELEPHONY

In telephony the exhibits show a great advance. Strides have been made both in the elaboration of detail and in effective apparatus. The best telephone exhibit ever made is here. The progress of a few years has caused the telephone companies to change from the use of the individual battery to the common battery or central energy system. By means of the recent invention of Dr. Pupin, of Columbia University, the human voice will be



THE ELECTRIC FOUNTAIN



Photographed by C. D. Arnold

AN ISLAND IN THE LAKE

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carried across the continent. But without Dr. Pupin's invention the telephone transmitter of the present day is very acute. There has been refinement in its development till it is possible to transmit and receive messages over distances unheard of till a little while ago.

NEW TELEGRAPHIC DEVICES

The telegraph systems exhibited by Patrick H. Delany give intimation that this art, which has shown less progress comparatively than some other applications of electricity, may be on the eve of bounding forward into a new era of swiftness. While it is now possible to send telegrams from New York to San Francisco without repeating by human aid, by means of automatic repeaters, the speed of operators is limited to from forty to fifty words a minute. By Mr. Delany's system of high speed automatic telegraphy it is possible to transmit from one hundred to eight thousand words per minute over a single wire, the speed depending wholly upon the distance and the character of the line. It is claimed that eight thousand words can be recorded over a line fifty miles long, while between New York and San Francisco one hundred words would be about the limit over a copper wire such as is used for long distance telephony. In the operation of this new system the messages

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are put on a paper tape by a perforating machine. This perforating machine is operated by the Morse key, and in perforating the paper tapes the operator performs the same service as though sending a telegram. This paper tape is then passed through a transmitter, which makes contacts for dots and dashes through the perforations. At the receiving stations these signals are recorded on a chemically prepared tape in dots and dashes of the Morse code. The transmission is purely mechanical, and as the recording is effected electrolytically by the current, the speed of transmission is only limited to the possibilities of the line.

The possibilities of wireless telegraphy, exhibited in the Government building, have been demonstrated in this country and in Europe.

The megaphone, strange to relate, though invented by Mr. Edison in 1879, was not

SCENES AT A BULL FIGHT IN THE ARENA

In "The Streets of Mexico," on the Midway

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utilized until the Spanish-American War, when it became an indispensable device for communication between moderately distant points, more particularly from ship to ship. Since then, megaphones have multiplied until now their number is legion, as a visit to the Pan-American Midway will demonstrate.

In the matter of signalling, the Pan-American exhibits portray a gratifying advance over past expositions. This is true of wireless telegraphy, as well as of the Government system of signalling.

STORAGE BATTERIES

Evidences are exhibited of much study and hard work devoted to the development of the storage battery. In this field extended progress is shown, with a further promise that the latest invention and production of Mr. Edison will be exhibited in the Edison space in the Electricity building. Thus four different types of storage battery are exhibited. Great interest centres in this new invention of Mr. Edison, because it will give five or six times the output of the current for the same weight of battery. How long a time will elapse before one may buy a bottle of electricity as easily as a few yards of dry-goods?

ELECTRICITY TO THE RELIEF OF THE DEAF

The akouphone is another remarkable instrument. Its purpose is to enable the deaf to hear. It is operated by a small battery that will fit in a hip pocket. The manner in which it increases the strength of sound or words spoken within its grasp is truly wonderful. The akoùlalion is designed for deaf and dumb, to enable them to hear and perfect their speech. So marvelous is this instrument that it makes a roar of a whisper. In fact two persons may stand close together, and one whisper into the instrument while the other holds the receiver to the ear. While the whisper will not be heard by the free ear, the sound and words will come to the other ear through the instrument with wonderfully increased strength. This is one instance

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SCENES IN THE ESQUIMAUX VILLAGE ON THE MIDWAY

THE TEMPLE OF MUSIC AS SEEN THROUGH THE PORTICO OF THE MACHINERY BUILDING

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THE FOUNTAIN OF NATURE
In front of the Horticultural Building

where electricity seems on the point of doing wonderful things for the afflicted.

The advancement in electrical science since the World's Fair has developed a startling cleverness in the construction of generators, transformers, and especially in switchboard work and apparatus, all which is practically new. The air-blast and the oil-cooled transformers are evidence of the progress made. The use of aluminum for feeders is not to be overlooked, and this new white metal, which is a product of electricity itself, has advanced to surprising popularity for use as a conductor and in many other ways. This fact is well shown by the aluminum transmission line between Niagara Falls and Buffalo.

In the Edison space in the Electricity building there is exhibited for the first time the thermopile, one of his latest inventions. It gathers electricity from heat waves. Its possibilities are large. It is one of the very newest features of the magnificent contents of the Electricity building.

One of the very interesting applications of electricity to mining work is represented by the modern electric mining locomotive shown in the exhibit of the General Electric Company. The controller, sanding device and brakes are all controlled from one point where the operator sits. It is fitted with electric headlights. It weighs ten tons, and is made for thirty-inch gauge. A typical electric mining-pump is also shown, while the application of electricity to pumping water is shown in several parts of the Exposition plot.

ELECTRICITY ON SHIPBOARD

That electricity has secured a firm foothold aboard ship is well known, but the progress in this direction during the past few years has been very notable. Marine generator sets and searchlight projectors are a necessary part of the equipment of every modern vessel. Electricity finds still another use aboard ship in its application to the running lights. In the General Electric Company's exhibit at the Pan-American there is shown a safety device that is remarkable. It is well known that there is always a possibility of one of the running lights being extinguished, and this

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THE TRIUMPHAL BRIDGE AT NIGHT
The Standard Bearers on the towers photographed by searchlight

Photographed by C. D. Arnold

IN THE COURT

Photographed by C. D. Arnold

A DOORWAY

Photographed by C. D. Arnold

LOOKING TOWARD THE TOWER

Photographed by C. D. Arnold

A CORNER OF THE COURT

AROUND THE MISSION BUILDING

A Picturesque Structure containing Agricultural Machinery Exhibits

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MR. PROCTOR'S "AGRICULTURE"

By Searchlight

has to be most carefully guarded against. When oil lamps are used this can be done only by the man on watch forward; but with electric lights a satisfactory device places this responsibility in the pilot house. Should one of the electric running lights become extinguished, this tell-tale device at once begins to buzz and a lamp is lighted, calling the at-

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MR. PROCTOR'S "AGRICULTURE"

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ON THE CANAL

In the Streets of Venice

tention of the pilot, both by sound and light, to the fact that one of the running lights is extinguished. By means of a small switch he lights a second lamp and gives orders to replace the extinguished lamp.

The thirty-inch projector installed and operated high up on the Electric Tower is a splendid sample of the progress in perfecting these powerful lamps, casting its beam far up Lake Erie, far across into the Dominion of Canada, and down to Niagara, the source of its illuminating powers.

THE QUESTION OF TRANSPORTATION

WHILE electricity is bringing the ultimate possibility of talking around the world nearer realization, and is transmitting pictures and signatures at a distance, larger and more economical locomotives and steamships are cutting down the time of bodily travel between places. "A mile a minute" on long, level spaces with light trains was one of the wonders of railroading a few years ago, but now heavy trains are covering ordinary runs at a faster rate. For example, there is a record of a train in the Carolinas which carried five well loaded cars over one hundred and seventy-three miles in a little over two hours and a half; of a train in New York which drew four coaches one hundred and seventy-seven miles in an actual running time of slightly over two hours and three-quarters, and another in Ohio which covered one hundred and seventy-six miles with four cars, in less than two hours and three quarters, besides many shorter runs at a rate upwards of eighty miles an hour. And these were made in the ordinary run of business, not for records. The great strides in construction have been made towards durability and economy—towards an engine that can stand the steady pull of day in and day out hauling, and which costs least to run. One locomotive, in the ordinary course of its work, ran lately over 125,000 miles in a year. The compounding of engines, though begun in the eighties, has been a practical development of the last decade. Its main object has been the economy of fuel, by reducing the consumption of steam in the cylinders and by getting more work from the coal burned. Large horse power is being gained by enlarged grate surface in the boilers. In the Vanderbilt boiler a cylindrical firebox is suspended within the shell of the boiler, supported at the rear and bottom. Other
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car was made. There are two great sources of superiority in the steel car over the wooden one: greater capacity to lighter car, and durability, if properly cared for. A careful estimate figures upon twice as long life for the steel car over one of wood, and a steel car will stand in a wreck when the wooden car would be badly smashed. The ordinary yellow pine freight car with a capacity of 60,000 pounds weighs 30,000 pounds empty, while the average steel car carrying 80,000 pounds weighs 28,000 pounds. The saving which this reduction of dead weight brings is manifold. It reduces the number of cars, switching service, length of trains, everything in fact that has to do with the number of cars needed to carry a certain amount of freight.

Carefully figured estimates of the earnings per year of wooden and steel cars gives a single steel car, on account of its lighter weight and larger capacity an advantage of $94.50. There being somewhere near 1,500,000 wooden cars in service in the country, there would be an aggregate yearly saving of $141,750,000 if steel cars were used. Another estimate, taking the capacity of the cars as a starting point, gives a result of $147,000,000 saved. There are now about 50,000 pressed steel cars in use, and the first one was made only four years ago. No better evidence of the worth of the idea could be given. Medium soft Carnegie steel with an ultimate strength of sixty thousand pounds to the square inch is sheared to the proper sizes for the various parts. These are pressed rapidly into shape by hydraulic presses. The parts are riveted together by machinery and by hand, the particular brakes and draft-gear desired by the railroad ordering the car, are put in, and the cars are erected on the tracks in the erection shop. A suitable coat of paint is added, and the car is ready. This covering of paint must be carefully maintained or the durability of the car will be lessened.

STREET CAR SERVICE

And if the advances in speed and comfort and superior construction in the service for long distances have been marked, there has been a veritable revolution in street car service. The story of this development is told on the streets of New York where dingy, jarring little dories of horse-cars cross easy running, comfortable, speedy electric lines. Cars are being made to fit every convenience, open cars for summer, closed cars for winter, and cars half open and half closed: small cars and large cars; mail cars, baggage cars and cars with smoking compartments; parlor cars for private excursion parties and observation cars that put the new Fifth Avenue electric stages to shame; cars for snow sweeping and for water sprinkling. Summer open cars had their disadvantages during a storm. Curtains were added, which in a measure kept out the driving rain. But the curtains came only half way down, and the seat end was made with a round corner that the car might be entirely closed in. Last of all a new convertible car has been invented. It is an open car with an aisle—giving the much needed standing room—and is fitted with sliding panel, a sliding sash and curtains. In three or four minutes the lower panels and the window sash are in place, and the open car is closed—closed against rain or cold air as thoroughly as the common variety of closed car. The inside of the panels are lined with wilton carpet, adding warmth. The sash and panels are held in the roof when the car is used as an open car, so that the transition can be made quickly with the weather changes. In a large number of cities the Boards of Health require the use of a number of closed cars at all seasons of the year. This car meets the requirements without making its passengers uncomfortable, and the often experienced irritation at being forced to ride in an open car in the cold air or a closed car when the weather is hot is obviated. And it is not only on the city streets that the electric cars are being of service. A network of tracks and wire is connecting city with suburb and with neighboring city, the country over. For short distances it is cutting in on railroad traffic, and the railroads themselves are using electric or third-rail lines. Large cars forty feet long and eight feet wide, weighing upwards of fifteen tons are being made, capable of carrying seventy-two people at a rate of fifty miles an hour. Cars of this type are being used by the Buffalo and Lockport Railroad, replacing the former steam equipment, They are divided into two compartments—the one for general passenger service; another, a small smoking compartment with seats for twelve people. On some cars this latter is a convertible baggage or smoking compartment. On many of the cars on inter-urban lines the construction—both roof and sides—is modeled after that of the common steam car. Elec-

tricity has already become the seven-league boots by which we step from our house door to that of a distant friend.

GUNS AND AMMUNITION

ALTHOUGH the nervous emotionalism which accompanied the Spanish War has steadied down into a solid national patriotism there is nothing at Buffalo in which the mass of visitors seem to be more interested than the big and little guns of the ordnance exhibits, shown by the Government and by many individual manufacturers. The result of the insular campaigns has been that we are making our own war supplies, and are ready for any unpleasantness that may be forced upon us. Moreover, as the commercial ordnance exhibit shows, there is no reason why the United States should not make munitions, as well as other things, for the world. A twelve-inch disappearing gun weighing 195,000 pounds, which pierces steel nearly thirty inches at 1000 yards with a projectile weighing half a ton, is here. It is accurate for a distance of eight miles and has an extreme range of twice that distance. This gun is designed for coast defence and is fitted with a mechanism by which the recoil of the firing lowers the gun seven and one-half feet, behind the fortifications. The Maxim rapid-firing gun operates, also, by recoil, but the American-made Colt gun shoots six hundred charges a minute by the operation of the gases which accompany each discharge. Cavalry charges, long the terror of an infantry line, seem to be things of the past in the face of these guns which may be turned from side to side so as to sweep the field. And one gun alone could clear a mob from a street in a minute. The Colt gun has a record of seven thousand consecutive discharges. The same principle has been used in a new rapid firing revolver which, by the mere pressing and holding down of the trigger, fires seven shots in quick succession. Repeating rifles have taken the place of the single charge gun.

By the introduction of smokeless powder it has become possible to fit a rifle with a telescope for a sight, decreasing the distance to the eye and making surer accurate aim. This telescope is water and dust proof, and is easily adjustable. In the twilight it will often bring objects into sight which cannot be located by the naked eye.

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The turret is turned by electricity so that a boat can be followed accurately. The gunner need never take his eye from his target and he is encouraged by the feeling that he is absolutely safe from the shots of the ship. By the rapid fire system a round can be fired every thirty seconds. This style of defence has been developing for over thirty years. There are some fifty or more turrets in use in Europe, and now an American concern is to take up the work which, in a measure at least, has made Krupp the great gun maker that he is.

AROUND THE EXPOSITION'S EDGES

ACETYLENE GAS

IN the face of the startling electrical lighting effects everywhere, there is a little building which is illuminated every night with the brilliant white light of acetylene gas. The building is looked upon with a certain amount of awe by many visitors, for the impression of danger is connected closely with acetylene in the popular mind. The practical use of calcium carbide has been a development of eight or nine years, and has spread to the entire world. The brilliancy of its light is undeniable, its cost is figured by experts to save sixty-two per cent. over city gas, fifty-two per cent. over gasoline, and seventy-six per cent. over electricity, and the method of using it is being simplified rapidly. In a lately patented generator the crushed carbide is automatically fed into the water, generating exactly the right amount of gas, giving no chance for any gas escaping, and is simple and easy of installation.

The danger from explosion seems to have been exaggerated. Many gases will explode under wrong conditions, and acetylene is not excepted from the general rule. So far, moreover, it has little more than passed the experimental stage. It is said to be less poisonous to breathe than common illuminating gas, and is so irritating that asphyxiation is less possible. Nor does acetylene vitiate the air more than common gas. As to explosions, they have occurred usually through carelessness. Taking a small closet room for an experiment, a jet leaking for an entire day will be filled to the explosive limit, but this is not probable in ordinary usage. City gas itself has been the cause of many disasters. Acetylene lighting, with simplification of installation and use, seems likely to take its place alongside of electricity and gas as a universal light.

ELIMINATING THE MIDDLEMAN

An interesting business experiment which has proved successful with a number of concerns is shown by one of the pioneers of the movement. A soap factory buys its ingredients direct from the grower and sells to the consumer, without the interference of the wholesaler, the jobber and the retailer. And they give credit to all buyers. The premium idea is a success with them, and they furnish their buyers with articles ranging from costly furniture to small novelties. Each family becomes salesman for the concern. The poor girl who on the day of her wedding has furnished an entire little home with soap premiums is not an uncommon result of the idea.

SOME GROUPS OF FACTS

Although the Exposition, since it was limited to the American states only, is by no means as large as the Chicago Fair, it is, nevertheless, an aggregation of interesting things of very considerable magnitude. Some idea may be conveyed of its extent by grouping together a few representative facts. The Niagara power that is used for illumination alone is five thousand horse power; there are about two hundred thousand electric bulbs on the grounds. This electric lighting requires forty-two miles of wire. The Electric Tower itself is four hundred and nine feet high, and the Goddess of Light that surmounts it is eighteen feet high. Thirty-five thousand gallons of water per minute are required for the display of all the fountains; the cascade falls from the Electric Tower at a height of seventy feet; and the cascade is thirty-five feet wide. There are ninety-four searchlights in the basin.

Passing to another group of facts, there are five hundred flower beds on the grounds, and about five hundred different pieces of sculpture. The total number of buildings is one hundred, twenty of which are classified as larger exhibit buildings.

The area occupied by the Exposition is three hundred and fifty acres. The total cost of the enterprise was about ten million dollars, including five hundred thousand dollars appropriated by the government for its building and the three hundred thousand dollars appropriated by New York for its building.

THE PLAY-SIDE OF TH

BY

MARY BRONSON HART

THE prodigal modern Midway is fairly using up the earth. A few more Expositions and we shall have left nothing that is wonderfully wonderful, nothing superlatively strange; and the delicious word "foreign" will have dropped out of the language. Where shall we go to get us a new sensation? Not to the heart of the Dark Continent; Darkest Africa is at the Pan-American. Not to the frozen North; we have met the merry little fur-swathed, slant-eyed Eskimos behind their papier maché glacier in Buffalo. Not to the far islands of the Pacific; Hawaiians, and little brown Filipinos are old friends on the new Midway. Not to Japan; tea-garden geisha girls, and trotting, mushroom-capped jinriksha men have rubbed the bloom off that experience. Not Mexico, not Hindoostan, not Ceylon, not the Arabian Desert, can afford us a thrill of thorough-going surprise. Step into the gay streets of the Pan-American cosmorama—the Midway. The first sound which greets your ears is the long-drawn wail of a fog horn and the shout of "All aboard! The airship Luna leaves in three minutes for the Trip to the Moon." There! you see, not satisfied with exhausting the earth, they have already begun upon the universe. Behold, the world is a sucked orange.

Exposition crowds, however, are serenely unconcerned over the prospect of a future without novelty. The present is full of fresh sensations and that is quite enough for them. They plunge into the riot of nonsense with unthinking glee. They slip shrieking down the fearful dips of the Scenic Railway in company with Navajo Indians with yellow sun-rays painted round their eyes, and dark, sombreroed Mexicans, and low-browed, straight-haired Eskimos. They lunch in Spanish, dine in German, and take their evening coffee in select "Toorkish." They give free lessons in "American" to splendid turbaned Moors. Each hour of the day they try a new form of locomotion—a dislocating jaunt on a loping camel, a slow ambulation on a stump-footed e
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Midway stands for immense capital, for conspicuous ingenuity, and for (does it sound absurd?) not a little art.

The Buffalo Midway is practically twins. Originally confined to a crooked thoroughfare on the north side of the main street of the fair, it grew and grew to such proportions that it stretched out to an equal length on the other side the mall. Enter either of these hilarious streets and you will find them lined with picturesque buildings no less carefully designed, or delicately executed than the formal structures for industrial exhibits. Deep arched doorways, enriched with concentric ripples of fine flower-molding, airy towers, Moorish domes, and groups of slender minarets, sunny tinted walls, or wide shading eaves, mark the more conventional of the concessions; while the ice peaks of the Eskimo Village, the bark barricade of Darkest Africa, and the pretty nipa-covered roofs of the Filipino settlement give the street the fantastic air it could so ill afford to spare. No former exposition has had a Midway approaching this for architectural elaborateness and excellence. It is easy to say that the architecture has been too freely treated; that for instance, towers in Mexico appear only upon cathedrals, and that the minaret is the mark of a Mohammedan mosque, not the decoration of every street corner. Quite true. But the Midway designer is working for effect, not for accuracy. By using foreign motifs even out of place he gets the general look of a characteristic foreign town. Without the more imposing features, the foreign village would be flatly inconspicuous.

Inside, the Midway show is as much improved as it is without. In the first place it is on a larger scale than its prototypes at previous fairs. The Cairo Street of Chicago has expanded into eight converging thoroughfares, with a population of six hundred Orientals, not counting camels and donkeys. What was an entire twenty-five cent concession at Omaha, (an illusion of a girl walking in mid-air), appears as a trifling incident of the Pan-American Trip to the Moon. The evolution of the concession called "Darkness and Dawn" is typical of the history of many another attraction. Suggested by the "Cabaret de la Mort" in the Latin Quarter of Paris, the show made its American début at Nashville under Mr. Roltaire, as a café of the dead, (where people ate and drank out of skull dishes from off coffin tables), coupled with two illusions—Day and Night. At Omaha the illusions materialized into actual regions, and for the first time since Dante's day the public was led through the secret places of the Inferno and the Paradiso. In Buffalo the spectacular effects of the grim journey have so outgrown the original idea that the Cabaret de la Mort, once the whole concession, has subsided into a mere waiting room, providing a few preliminary thrills before the trip to the underworld is begun. Again, Mr. Roltaire's House Upside Down is a copy of a Paris concession with this important development, that whereas the French show was a mere topsy-turvy house, with real furniture stuck to the ceiling, the Pan-American oddity is upset by means of an elaborate arrangement of mirrors, and you go walking about head downward on the ceiling yourself.

Quite as interesting as the development of the show is the evolution of the showman. But that is a story which cannot well be told without discussing the wider and more serious development of which it is but a part. The technical school of the future will probably add to its curriculum a new department—the department of practical exposition-culture. For since we Americans have taken seriously to celebrating a centennial of some sort every other year, the business of exposition making has risen to the rank of a true profession, a profession too with a fixed and definite personnel. A great army of industrial nomads goes trailing about the map, from Atlanta to Nashville, from Nashville to Omaha, from Omaha to Buffalo, from Buffalo to Charleston, and St. Louis, and New York. Included in the camp and camp following are boarding-house keepers, ex-prize-fighters, small showmen, Midway magnates, electricians, landscape gardeners, architects, sculptors, mural decorators, department superintendents, and even director-generals. For each fresh exposition city, having scattered a fair share of professional plums among its own inhabitants, instead of creating for itself a fresh corps of executive officers, is glad to fall back upon the wisdom and experience of the men who made the last exposition a success. Nothing could be more rational. For when a man has mastered the infinite detail of a big fair he is much too valuable to be dropped back into private life like a cast-off President. And so, once launched upon an exposition

career, a man finds himself committed to the exposition business for life.

In no profession is it truer that there is always room at the top. The bigger sort of man cannot be captured by the smaller sort of exposition. All the better for the smaller sort of man, or for the big man in the making. At Chicago he may be merely in charge of a State exhibit. Omaha will probably make him superintendent of a department or two, and Buffalo will promote him to a directorship. That is the true story of one of the most energetic of the Pan-American directors, and it is typical of the experience of many another. Director-General Buchanan himself served his apprenticeship at Chicago as National Commissioner from Iowa, and Chief of the departments of Agriculture, Forestry, and Live Stock. When the fair was over, Mr. Buchanan, doubtless without a thought of dabbling further in the exposition business, accepted the post of United States Minister to Argentine Republic. But he was a marked man. When the Pan-American claimed him, he succumbed to importunity and came duly to Buffalo.

Below the executive officers is an army of specialists in exposition construction. For the building of a temporary city implies peculiar problems in architecture, in roofing, in electric lighting, in hydraulics, in road-making, and in landscape gardening, each to be met by expert knowledge. Even the sculpture of an exposition belongs to a school of its own. Designed to be set in great open courts, or to look down from the high domes of mammoth buildings, it gets its effects by vigor and dash rather than by finished delicacy. The same men, barring one or two great names, have designed the sculpture for the Pan-American who did it for Chicago. And in all probability the same men are already plotting the plastic decorations of Charleston. There is probably no more certain short cut to artistic fame than the exposition route. Consider Mr. Karl Bitter. Before the World's Fair he was known only to the knowing. Now his name is a household word in the uttermost parts of the land.

It may seem scarcely strange that careers should develop beneath the dome of an Administration Building. But that not fortunes only, but reputations, should spring up on the riotous Midway, is matter for some surprise. Many people fancy that when a new show

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almost say glorified, Cairo Street. And it is probably safe to prophesy that every man, woman, and child who did not go to Chicago, and who has heard of the charms of the hump-backed camel and the rest, will buy a ticket for Beautiful Orient. Yet again, one would suppose that it would be scarcely possible to make the exterior of a concession too imposing. Yet so experienced an artist in Midway effects as Mr. Roltaire, says that there can be no greater mistake. The public can study the outside of the show free of charge. When it pays to go in it wants to see something finer than the free outside. What the concessionaire undergoes in the collection and management of a great body of assorted foreigners, it is difficult to realize. Some of the most desirable Orientals are extremely unwilling to leave home, and must be practically coerced through their sheiks, who see a money advantage in the trip. When they are captured, they speak a Babel of varying dialects, and represent a number of most unmixable religions. Gaston Akoun was obliged to build a Mohammedan temple for his Moslems —a temple into which neither the curious public nor the concessionaire himself dare venture. An electrician who got into the temple by mistake not long since came very near losing his life at the hands of the faithful.

Concessionaires are by no means the only professional men on the Midway. There is, for example, the inventor and designer of Midway shows. This is at present a one-man profession, occupied by Mr. F. W. Thompson of the Trip to the Moon; but for all that it is a genuine profession with unique requirements. The designing of grottoes, for instance, is exacting business. You cannot say, let it be of this style, or of that. Every stalactite, every blow hole, every dip in the tunnel, every cleft in the rock must be worked out by the architect himself. A little like designing stage scenery, one would think. And so it is, but with this important difference. Your audience instead of looking at the performance through a proscenium, occupies the stage itself. There are no wings to work through; and you cannot make half an object look like a whole one. Mr. Thompson has studied with Kenyon Cox and Robert Blum, and is something of an artist himself. Yet he declares that he never dares to make a spectacle as beautiful as he can. The crowd won't appreciate it if the color is subdued enough to make it really artistic. They want the tinsel of the circus, and are not happy unless they get it. Here Mr. Thompson differs from Mr. Roltaire, who designs his own illusions. Mr. Roltaire thinks that the public grows more exactingly artistic every year and that the best you can give them is none too good.

Then there is the Midway press agent, an artist too in his way. He is a romancer of a very subtle sort, a weaver of delicate fictions which have a grain of truth at the bottom, but which catch the public eye as cold facts never would. A skilful press agent knows just how far he can go. But he is a *rara avis*. Indeed, Mr. Bostock says that he would rather train six jungle lions than one press agent. A little fiction is a telling thing. You may advertise for horse-flesh for the lions provided you really use it on state occasions. The public may get the impression that lions subsist on horses, but what harm if they do? If, however, you follow that coup with an advertisement for rags to feed to the elephants, the public, its credulity overstrained, will bolt on the horse story as well, and put you down for a conscienceless fraud.

Last of the professions on the Midway are those of the "barker," "ballyhooer" and "spieler." Step into the Midway on any warm night from out the silent glow of the great illuminated courts, and you will hear this profession at work. The air is thick with promiscuous sounds; the wild yap-yapping of the barker, the moan of the fog-horn, the bellow of the megaphone; the clash of brass and the boom and wheeze of reed-bands; the clang of dinner bells; the sharp rap of canes and clappers; and the deep roar of an army of trumpet-throated lecturers, mingled in one vast inextricable din. These conspirators against your hearing are of three orders. First there is the ballyhoo—any sort of a performance outside the show, from the coon songs of the pickaninnies in front of the Old Plantation, to the tinkling tamborines of the dancers on the stage of "Around the World." Next comes the barker. Technically speaking, he is a man who makes a noise (any sort of noise so it is louder than his neighbor can achieve) before a show to attract attention. His duty is to catch the crowd and draw it within hearing of the professional "spieler" —the genius of the Midway. The spieler has in his make-up something of the romancer and something of the hypnotist. He talks to the

reluctant public till the money is fairly charmed from their pockets, and they cannot choose but go into the show. The spieling artist knows his crowd. If it is what is technically known as the "Reub element" from the country, it is impossible to put the color on too thick. A more intelligent audience takes delicate handling. A little too much bombast, and away they go to fall prey to more scientific manœuvering. Two principles the spieler keeps in mind. One is that if you can keep a crowd thinking about a show long enough, psychological suggestion will do its perfect work. They will go in. The other principle is that grown people are only big children. They have a strong tendency to do as they are told. The assumption of authority, the energetic wave of the arm toward the box office will "turn
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OUR TRADE WITH LATIN

BY

FREDERIC EMORY

CHIEF OF THE BUREAU OF FOREIGN COMMERCE, DEPARTMENT

ON the surface of things, the strenuous efforts which the United States has made for the past twenty years to cultivate closer relations with the Latin American republics have had but indifferent results. The most sanguine advocates of Pan-Americanism have been chilled and disappointed by the lukewarmness in practical effort of all the parties to a movement which has had the strongest support in official action as well as in popular sentiment. The dream of a general unification of the American republics in their political institutions, their attitude towards the rest of the world, their trade, their industrial, social and intellectual development, is one that has appealed to statesmen, to idealists, to practical men of affairs. As yet, it seems almost as far as ever from being realized, so far as the South American countries are concerned.

TRADE INTERCOURSE THE BASIS OF UNITY

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when we shall have seriously set to work to win the trade of South America, and to develop its vast resources, we may confidently expect the rapid growth of our influence in most of its characteristic forms of expression.

SPREAD OF THE AMERICAN IDEA IN MEXICO

The truth of this conclusion would seem to be demonstrated by our recent affiliation with Mexico, the Central American countries and the West Indies. Capital and skilled labor are pouring into Mexico from the United States, and our relations with that republic were never so cordial. Last year, Mexico made more than half of her foreign purchases in the United States, an increase of twenty-two per cent. over the previous year, and she sold to us three-fourths of her exports, an increase of eleven per cent. To the general hostility and suspicion of the "Yankee," growing out of the war of fifty years ago, and still active up to a very recent period, have succeeded a genuine feeling of good will and confidence, and an active spirit of emulation of our enterprise and our social efficiency. It is not too much to say that Mexico is fast becoming "Yankeeized," and that our growing influence is recognized there as a most important factor of increased stability and prosperity, as well as of intellectual and social progress. In the New York *Journal of Commerce* of May 23d, Dr. Walter E. Weyl, who recently spent six months in Mexico on some special work for the United States Department of Labor, is quoted as stating that our people are absorbing most of the large enterprises of the country, especially the railways and the banks, and are coming forward with new projects and abundant capital to carry them out. "They are recognized everywhere as a growing though unostentatious force in promoting good government and the continuous influence of the conservative classes of Spaniards and Mexicans."

CENTRAL AMERICA AND THE WEST INDIES

The same thing is true to a greater or less degree of Central America and the West Indies. Notwithstanding the large investment of German capital in Central America—estimated to amount to nearly seventy million dollars—and the activity of German traders there, our goods are making steady headway, especially in British Honduras, Costa Rica, the Republic of Honduras and Nicaragua. The trade relations of our Gulf cities with Central American ports are becoming more and more intimate, and California, with improved transportation facilities, is increasing her commerce on the Pacific side. In recent years, many of our people have settled in Central America, and are contributing materially to its industrial development and the spread of our influence, as well as to the growth in sales of our goods. It seems to be but a question of time when we shall have practically monopolized the trade of the West Indies and taken charge of their finances and industrial enterprises. Most of the islands already draw the bulk of their food supplies from us, and an increasing share of their manufactured imports. In two of the larger islands—Jamaica and Haiti—in which European competition, from racial as well as other causes, is most active, our ascendancy seems to be assured. In Jamaica, we have sixty-four per cent. of the imports, against a little over thirty-three per cent. from Great Britain. To Haiti we furnish sixty-six per cent. of the imports, though nine-tenths of the exports are sent to Europe. Now that we have a footing in Cuba and Porto Rico, we may expect that the tendency of the Antilles towards commercial absorption by the United States will be greatly accelerated, especially if reciprocal trade relations are availed of to enlarge the volume of exchange.

SLOW PROGRESS IN SOUTH AMERICAN TRADE

A very different picture presents itself when we reach the South American coast. Our exports to all South America, which were valued at $34,700,000 in the calendar year 1890, amounted to only $37,400,000 in 1899, and to $41,250,000 in 1900. Exports to some of the countries, it is true, show an increase. We sent Argentina nearly $5,000,000 worth in 1890, and over $11,000,000 worth in 1900. Chili received goods from us to the value of nearly $1,000,000 more in 1900 than in 1890. Our exports to Ecuador also rose from $858,600 to $1,590,000, and to Peru, from $1,500,000 to $2,300,000. But these gains were largely counterbalanced by the stationary condition of our trade with other countries, or by an actual loss in some cases. The same is true of the imports into the United States from South America, which were $100,900,000 in 1890, only $91,700,000 in 1899, and $102,706,600 in 1900. A few

countries show slight gains in this line—Argentina, Chili, Ecuador and Dutch Guiana—while from Peru the increase is noticeable, although the returns have fluctuated very much in the last ten years. On the other hand, imports from Brazil, Uruguay, Venezuela, etc., have fallen off.

OUR COMMERCE SEEKING EASY CHANNELS

In general, it may be said that our trade intimacy with Latin America diminishes as distances increase and transportation facilities lessen, and we cannot hope for any substantial growth until we provide the proper channels of exchange. In other words, our commerce as yet continues to follow the lines of least resistance. We are forging ahead in Mexico because we have close connection with railroads reaching to the heart of the country, and United States capital is largely invested in them, and in banks and industrial undertakings. We are rapidly acquiring commercial control of the West Indies because we provide them with steamship communication and are financing many of their industries. The fruit trade of New Orleans with Central America has developed similar reciprocity of interests and frequency of intercourse. These regions are convenient to us; we have reached them automatically, as it were, in the ordinary course of trade expansion, with but little effort. South America is to be reached only by a long leap across the Caribbean Sea, and still longer voyages down its Atlantic or Pacific coast. A larger volume of trade involves much greater effort and an expenditure of money, time and enterprise which, as yet, does not seem to have commended itself to our business interests as a judicious investment.

OUR GEOGRAPHICAL RELATION TO SOUTH AMERICA

A glance at the accompanying map will show that, after leaving the Caribbean coast, we lose an increasing part of our geographical advantage over Europe in competing for the South American trade. The whole Atlantic seaboard of the South American continent is far to the eastward of the United States, and much nearer to the Old World than to us. A line drawn due south from New York would strike as far to the westward as Peru. In other words, much the greater part of South America is not directly south of us, but southeast. Pernambuco, Brazil, is thirty-

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gaining control of the trade of the Pacific slope of both Central and South America, and it may be that, in course of time, the Caribbean coast will be dotted with termini of railroad and water routes, penetrating to all parts of Latin America, at which fleets of vessels will unload goods of all kinds from the United States, and take in return full cargoes of Latin American products. The maps given herewith show the intimate relations that our Atlantic and Gulf ports would sustain with the Pacific coast of Latin America by means of an isthmian canal, and with the entire coast line of the Caribbean Sea, upon the establishment of direct transportation lines, with the geographical advantages over Europe we would then enjoy.

MORE PROFITABLE MARKETS ELSEWHERE

The real difficulty lies not in the magnitude of our task in South America, but in the fact that, for some time to come, we shall probably find much easier and far more profitable employment elsewhere. The South American market doubtless seems to most of our exporters a negligible quantity compared with that offered by Canada or by any one of the leading industrial nations of Europe, and even by some of the smallest of the European states. Our total exports to South America at present amount to less than $42,000,000. To Canada alone, we sent last year goods to the value of $103,000,000, or more than twice as much; to Mexico, over $38,000,000, or only $3,000,000 less than to South America; to distant Australasia, over $28,000,000; to France and the Netherlands, $82,000,000 and $83,000,000 respectively; to Germany, $197,000,000; to Great Britain, $602,000,000, or nearly fifteen times as much as to all South America. To little Belgium, we sell some five millions more than the total of our South American exports. Our European trade, in fact, is so enormous, and is increasing so rapidly, that it is small wonder we have not time to busy ourselves with South America.

WHY WE NEED NOT FEAR EUROPE

It is in the continued development of our exports to Europe, however, that, paradoxical as it may seem, we find the surest guarantee for future expansion in South America. If we can compete successfully with European manufacturers in their home markets, surely we can undersell them in any foreign market when we find it to be worth our while to do so. Much has been said lately of German expansion in Brazil and in Central America. We are frequently told that South America

swarms with German drummers, and that the trade is largely in German hands. Until we are ready to dispute their supremacy, the Germans will doubtless continue to wax fat on profits that at present do not seem to allure us. And while they are pushing ahead in Latin America, we are making heavy inroads upon them at home. "It is one of the anomalies of the present situation in Germany," says Consul General Mason, of Berlin, in a recent Consular Report, "that notwithstanding dull and declining home and foreign markets for most products of German manufacture, there is an unusually brisk and insistent demand for certain articles of American origin. During no recent period have so many inquiries, personal and by letter, been received at this consulate from German firms and individuals who wish to be put into direct relations with American manufacturers and exporters, as during the first three months of the current year. These inquiries cover a large range of merchandise, including small machinery of many kinds, typewriters, time and cash registers, furniture and office supplies, shoes, leather, lumber, and even dress goods and other textiles of wool and cotton which, surprising as it may seem, are now produced in the United States under conditions which, it is believed here, will warrant their export to European countries. The significant and gratifying indication in all this is that American manufactures, as such, are becoming well known in Germany, and are appreciated and approved for their quality and price. Here, as in Great Britain, an American label or trademark has come to be recognized as conveying a certain guaranty as to general excellence in material, workmanship and ingenious adaptation to the purpose for which the article is intended."

OUR RIVALS TILLING THE GROUND FOR US

If the Germans themselves prefer our manufactures to their own, it is reasonable to suppose that countries like those of South America, which have no manufactures to foster in competition with ours, will not be less appreciative of them. In Great Britain, which is also strongly entrenched in South America, the superiority of American goods is even more generally conceded than in Germany. With amazing suddenness, we have leaped from industrial obscurity in foreign trade to the foremost rank as a purveyor of an infinite variety of manufactured goods, of machinery, of labor-saving implements to even the most conservative of the manufacturing countries of Europe, and that, too, in the face of deeply rooted prejudices and of hostile tariffs and other discriminations of various kinds. That the Germans and the English still maintain their hold in South America, and, in fact, are steadily growing, need cause us no concern so long as we continue to encroach upon them at home. On the contrary, as has been intimated, it should afford us the strongest encouragement if we look to the probable outcome. Is it too much to claim that they are really tilling the ground for us? Are they not developing South America, and making of it a more and more profitable market? German immigration, the investment of German capital in local enterprises, the extension of banking and shipping facilities by both German and English agencies, the building of railroads with English money—do not all of these contribute powerfully to the general development, the raising of the standard of living, the increase of consumption, and consequently, the growth in profitableness as well as in the bulk of the foreign trade?

As yet, we are not tempted to follow in the footsteps of our European rivals. Our capitalists are not attracted by what seem to them the meagre returns of the ocean carrying trade, of banking, of industrial investments in South American countries, by comparison with the profits of home enterprises or of exports through long established and convenient channels to the more reliable and more remunerative markets of Europe and the British colonies. They are not yet satisfied to give the long credits extended by Europeans; to manufacture, as the English and Germans do, for the special requirements of perhaps a very small and uncertain market, and in limited quantities; to pack their goods to suit climatic conditions or local peculiarities of transportation. The Europeans have been doing all these things for years, and they have found them sufficiently remunerative to justify their efforts for the reason that competition among themselves at other points has long been so severe that they have become used to profits that seem to us incommensurate with the labor and the risks involved.

Is the time coming when we too shall have to content ourselves with more moderate

profits and turn our attention to the trade of partially developed regions like South America, which at present receive but scant and sporadic notice from our exporters? And when that time comes, may not the development which must follow European activity there inure to our benefit in a larger volume of trade and a higher standard of consumption than if the field had remained but sparsely cultivated? No prophetic vision is needed to foresee results of our present course of expansion, which, sooner or later, may compel us to put forth our full energies in regions of the earth which as yet have won only our cursory and more or less negligent regard. It is not to be expected that European nations will permit themselves to be overwhelmed by our invasion of their home markets without a desperate struggle. Even if they fail in the efforts they are now making to readjust their industrial mechanism after our pattern by adopting our machinery and our factory methods, the European nations have still the powerful weapon of restrictive legislation.

And if our exports receive no serious check in Europe, or in the European colonies, the constantly enlarging demand will be met by a corresponding expansion of plant, and in seasons of dullness in the more profitable markets, there would be an overflow into the less profitable markets.

MERELY A QUESTION OF TIME

From any point of view, therefore, it would seem that the control of the Latin American trade is but a question of waiting until the harvest is ripe. By that time, we may have a merchant marine of our own and the various other agencies of commerce, such as railroads, banking, reciprocal trade agreements, exhibitions and sample rooms for the display of our goods at important trade centres, and traveling salesmen with a knowledge of the language and customs of the Latin American countries, all in full working order. It is the lack of these, as well as the comparative indifference of our manufacturers and exporters, that prevents us for the present from making much progress. It is certainly not the fault of our goods.

Our Consuls from all parts of South America report that United States products find ready sale wherever they are properly introduced. Barbed wire from the United States is one of our largest items of import into Argentina, and we have all the market in this line in certain sections of Brazil. Our sugar-mills and saw-mills are also winning the trade in Brazil, and our hardware, as well as our plows and reapers, are popular. Our drygoods are gaining in favor. United States drugs—especially patent medicines—are found in quantities in the market, and there are good sales of jewelry, clocks and watches, kodaks and revolvers. The largest items of our exports of manufactures to Argentina consist of agricultural machinery and implements, railway and electric material; our motor-cars are being introduced. In Chili also, our trade in railway supplies is reported to be promising. In Colombia, our coffee and sugar machinery, our hoes and machetes, are preferred to all others, and our glassware and hardware, as well as our beer and wines, are popular. In Uruguay, our agricultural tools are said to have won "marvelous success," and among other items of import from the United States are harness, carts, wire, windmills and plows. To Peru, we are sending agricultural and mining machinery, clocks and watches, electrical apparatus, nails, bolts and screws, typewriters, bicycles, cotton goods and lamps, as well as coal and canned goods. The imports of the last two items, especially, are said to be growing. In Ecuador, our axes, shoes, butter, brooms, bedsteads, canvas, clocks, perfumery, cutlery, stationery, hardware, firearms, scientific instruments, locks and canned goods compete well with those exported by other countries. Among other items of import from the United States are phonographs, printing presses, safes, stoves and steam launches. In British Guiana, we have a good trade in biscuits, confectionery, haberdashery and millinery, and our exports of sugar machinery are improving. In Venezuela, we are gaining a foothold in drugs, rope, wire fencing and cotton goods. All these manufactures, compete in the South American market with the products of European countries.

VALUE OF THE PAN-AMERICAN EXPOSITION

It would seem to be evident, therefore, that even with the relatively small effort we are making in the South American markets, our manufactures, and particularly those which the world has now come to regard as specialties of United States invention and mech-

anical ingenuity, are forcing themselves into general favor there, as elsewhere, by reason of their superior utility and excellence. It follows logically that, with the better facilities of transportation and the broader agencies of exchange which our business interests will doubtless provide when it shall pay them to do so, we ought to have no difficulty in capturing the lion's share of South American trade. Even in the absence of such means, and notwithstanding the comparative inertia of our manufacturers and exporters, our sales to South America might be largely increased by merely making known the variety and merit of the goods we are prepared to furnish. It is in this aspect of our trade relations with South America that the Pan-American Exposition is seen to have its chief value, and hardly less important is its probable effect upon our business interests in arousing them to a perception of opportunities which, even now, await them for extending their sales.

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GREAT INDUSTRIAL CH
SINCE 1893

BY
CARROLL D. WRIGHT
COMMISSIONER UNITED STATES DEPARTMENT OF LABOR

THE Columbian Exposition was practically an exhibit of the industrial situation as it existed at the beginning of the last decade: the Pan-American Exposition of the present year is a practical exhibit of the industrial situation of the country at the close of the decade. The story of the industrial progress of the country between the two great expositions, notwithstanding intervening years of depression, is not only most satisfactory but in many ways startling. If in 1893 one had had the courage to prophesy the industrial and commercial importance of the United States in 1901 he would have been considered rash and as not governing himself by the complete outlook. Four or five years ago pessimists told us that this country had reached its highest point and that henceforth we might look not for great growth but for a period of stagnation. Such figures as are at hand indicate the
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137 acres. In all probability when the figures are published it will be shown that the average size in 1900 was less than in 1890. The increase in the number of farms between 1890 and 1900 is almost as great as the total number of farms in 1850. The value of all farm products in 1890 was $2,460,107,454. It is not too much to say that the estimated value of farm products in 1900 was something over $3,000,000,000.

The value of the products of all mining industries, of the fisheries, the forests, and of farm products at the beginning of the last decade was $3,537,650,391. To-day a conservative estimate would place the values of all such products at $5,000,000,000, certainly a vast amount, representing labor, the profitable investment of capital, and the energy of the people.

The number of manufacturing establishments in 1890 was 355,415. At the present time the census office has received the schedules of 653,000, but probably not more than 500,000 of these are for establishments comparable with those counted in 1890. Taking this calculation as fairly correct, however, there has been a gain in the ten years of nearly 150,000 establishments engaged in the manufacture of goods. The total value of products, including receipts from custom work and repairing, in 1890 was $9,372,437,283. This amount, of course, includes the value of all raw materials, which in many instances were the completed products of manufacturing establishments, but in a census sense and for comparative purposes as running through the various censuses, it is the figure which represents the value of all products at the works at the time the census enumeration was made. Basing an estimate on the increase in the number of establishments and the tabulations of States already completed, a most conservative figure for the value of all products in 1900 is $15,000,000,000.

Agriculture and manufactures make commerce. The statistics of manufactured products show that the United States is easily in the supremacy relative to any country in the world. The commercial statistics are equally satisfactory, for now at the head of the world's great exporting nations there stands the United States. For the calendar year 1900 our exports of domestic products were greater than those of any other country, their total value for that year being $1,453,013,659. Great Britain ranked next, with $1,418,348,000, and Germany next, with $1,050,611,000. Thus the United States has reached the commercial supremacy of the great exporting nations of the world. Twenty-five years ago this country stood fourth in rank, the United Kingdom being first, Germany second, and France third. The United States has increased her exports during the past twenty-five years 192 per cent., Germany 73 per cent., the United Kingdom 34 per cent., and France 5 per cent.

This supremacy of the United States is due very largely to the enormous expansion of manufacturing industry during the last decade. Our manufactured products now constitute about 30 per cent. of the total exports. In 1860 they were but 12.76 per cent. Through our agricultural products we have been feeding many countries. We are now supplying them with both food and fuel. Formerly we imported great quantities of iron and steel, but now we are exporting these things. Ten years ago we had little or no production of tin-plate, the imports being over 1,000,000,000 pounds in 1891, but last year we imported only 108,484,826 pounds, a little more than one-tenth of the importations of 1891, while in place of manufacturing little or no tin-plate ten years ago we now manufacture nearly 1,000,000,000 pounds.

This story of the products of our manufacturing establishments and of commerce has been well emphasized lately by Lord George Hamilton, the British Secretary for India. He speaks of various things as having advanced more rapidly in America than in the United Kingdom. Chemical research, the concentration of capital, thorough technical education, and improved organization have, in his opinion, been far more rapid and extensive in America than in any other country.

All these things have had a marvelous effect in many directions which indicate growth, progress, and industrial expansion. Wealth has increased to such a point that the figures can hardly be comprehended. In 1890 the total wealth of the country, including simply tangible things at their true valuation, was $65,037,091,197. The best estimates of all those in a position to make intelligent calculations place the wealth to-day at between $90,000,000,000 and $94,000,000,000. This raises the per capita from $307.68 in 1850

and $1,036 in 1890 to over $1,230 in 1900, and it is a hopeful sign that notwithstanding the Spanish War the total national debt, less cash in the Treasury, is now practically what it was ten years ago; it stood then at $14.22, and last year at $14.52 per capita.

We may say that all these things relate to capital and to those engaged in the great enterprises of production and commerce, and there are many who go so far as to say these are the only ones benefited. The facts do not warrant such a conclusion. Labor has been benefited, perhaps not to its full share in the estimate of those receiving wages, yet the benefit has been satisfactory, and the increase in wages and their purchasing power has been decisive. We cannot yet state the average wages in 1900 as compared with 1890, so far as the Federal census is concerned, but there are various other sources from which deductions can be drawn, and deductions that cannot be assailed. Relative money wages (that is, nominal wages,) taking 1860 and the relative money wages of that year as 100, stood at 158.9 in 1890; that is to say, the increase between 1860 and 1890 was 58.9 per cent. In 1899 the relative position was 163.2 per cent. Wages were higher in 1892 than at any previous period in the history of the country, but in 1899 they were still higher, making 1899 and 1900 the period when the very highest wages in our history were recorded.

On the basis of relative wholesale prices, the situation in 1890 relative to 1860 (100 being the basis) was 96.3; that is, prices had fallen from 100 to 96.3, while in 1899 they had fallen to 83.6. Using these two bases, it is easily ascertained by a calculation that in 1890 the relative real wages—that is, wages measured by wholesale prices—stood at 165 relative to 100 in 1860, while in 1899 they stood at 195.2, an increase in the relative purchasing power, based on wholesale prices, of 95.2 per cent. over 1860 and 30 points higher than in 1890. In Massachusetts, a great manufacturing state, the relative weekly earnings of 73,000 employees in April, 1901, stood at 109.84 or 9.84 points above the level of February, 1898.

There is still another source from which positive evidence can be secured, and that is the value of the savings deposits of the country. In 1900 they amounted to $2,389,719,954, or an average due each depositor of $401.10. Ten
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the foundry business, in the building trades, etc., have clearly and emphatically indorsed the strength of this element of adjustment. The shoe trade of the Eastern and Middle States has long had its private boards, and hundreds and thousands of cases which formerly would have resulted in strikes and lockouts have been adjusted by the men who understand their own conditions. Herein lies one of the most encouraging features of our great industrial progress.

The accumulation of wealth alone is not sufficient to meet all social requirements. The moral elements must come in, and the fact that employers and employees are adjusting their own difficulties in a quiet, orderly, and dignified manner, without calling in the public to assist or confuse, is one of the most hopeful signs of the present day. Men are recognizing that while there may be some antagonisms existing between labor and capitalists, there ought to be no antagonism; that the employee invests his whole capital in his day's work, and that the stockholder invests part of his capital in his stock. They are, therefore, mutually and reciprocally related, and as this mutual and reciprocal relation extends it will be found that the interests are really identical and they must be guarded on every side.

Manufacturers and other employers have not been well organized to meet labor difficulties. The trade unions have set them an example, and this example is being patterned after by the employers themselves. The private boards to which reference has been made are an emphatic endorsement of this idea of the organization of employers themselves to meet the organization of employees in the adjustment of difficulties. In all probability the great industrial combinations of our time will lead to an extension of this method of adjustment.

The industrial combinations, or, as they are popularly called, trusts, constitute a new machine in industrial development. It is only natural that, like all other new inventions or machines, they should meet with antagonism; but should it be found in the future that the new machine—the industrial organization—means what the ordinary mechanical invention means—the reduction of price, the increase of wages, and the increased stability of employment—the antagonism to it will fall away, and we shall hear less and less of the dangers accompanying such organizations. Their just and reasonable regulation, like the just and reasonable regulation of the corporations with which we are so familiar, will probably eliminate whatever dangers lurk under them.

It is not too much to say that inventions, improved processes, and methods that eliminate elements of cost are in a very great degree responsible for the vast development which has taken place during the decade of years just closed, and yet it is quite difficult to specify any single invention along any line during that period that has had a marked effect upon any production. In the manufacture of iron and steel processes have been developed and extended rather than originated during that time. Electricity, of course, has played its great part in our iron and steel establishments. The handling of great masses of metal through electrical devices and in other ways has not only enabled the producer to secure greater results for the expenditure of like capital, but has increased the opportunities for a higher skill in the employee and has thus increased his wages and his importance.

In printing we have seen the vast extension of the wood-pulp business, not particularly through new inventions, but by the practical application of inventions that were not particularly successful prior to the period. This has stimulated the business of printing almost beyond calculation. So, too, we have the improved linotype machine, invented by Mergenthaler. Methods for setting type by machinery have long been known, but not until the improved linotype was perfected did the typesetting machine become a factor to any large degree in the printing trade. Instead of one thousand ems an hour, the speed of the average compositor, the manipulator of the linotype machine can set four thousand five hundred ems in the same time. Other machines have been invented having equal merit.

During the past ten years the printing-press has been vastly improved with the perfection of older devices and the application of improved details. One of the latest sextuple stereotype perfected presses has an aggregate running capacity of ninety-six thousand eight-page papers per hour. One pressman and four skilled laborers, using one of these presses, will print, cut at the top, fold, paste, and count with a supplement inserted if de-

sired, ninety-six thousand eight-page papers in one hour.

Among the great inventions of the last ten years are the improved rotary steam turbine and the Northrop loom. In the latter there is an automatic feeding of yarn which enables the weaver to tend sometimes twenty or twenty-five looms, and with a success which could not be secured by the old method, when the weaver tended only six or eight looms.

Electricity is constantly claiming the attention of inventors, and every discovery seems to be as marvelous as the first that was applied in any practical way. In 1895 Roentgen applied it in his method of discovery of internal obstructions, using what he called his X-ray invention, and now the most romantic prophecy of the electricians of twenty or twenty-five years ago is being verified in the various systems of wireless telegraphy. The marvel of sending dispatches from the open sea to land and across the land without the use of wires is becoming familiar, and people begin to learn that there is no limit to the use of this wonderful power. This practical development lies within the last five or six years.

The chemists are constantly bringing to the use of the public the results of their most skillful and scientific researches. The invention of acetylene gas will probably lead to the use of a light which will be far more satisfactory in many ways than the ordinary gaslight. The processes of making calcium carbide and of mercerizing cloth and a score of other inventions relate strictly to the utilities of life. Very many methods will be proved clumsy and out of date by the use of liquefied air. All the great inventions which have made past industrial development read like a chapter from the Arabian Nights, and which have led many to think that there was little in the future, are being perfected or newly applied until we begin to look to scientific men for developments that will make the marvels of the last forty or fifty years appear crude and primitive in their presence.

Among the great improvements may be considered the constantly increasing application of combined mechanics and electricity to some of the drudgery of statistical work. The great enumerations of the world are now summed up by Hollerith's electro-mechanical machines. Railroad companies, banks, and insurance offices are utilizing these inventions in making up the classified statements of their business. The census and other statistical offices are bringing out results which could not be obtained under the old hand methods, and doing it in much shorter time. Thus the individual, the manufacturer, the business man, and the Government are all profiting by the skill of scientific men.

In addition to invention and the application of science to the utilities of life as great elements in our industrial progress, it should be understood that skill and art acquired through industrial education in some form have done much to secure the supremacy we now enjoy. When the productions of the world were placed on exhibition at the Centennial Exposition in Philadelphia in 1876 the producing countries learned a great lesson. Bismarck asked the German representative at Philadelphia how the products of Germany ranked relative to those of other countries. "They are cheap and wretched," he replied. Germany had not taken kindly to the French method of technical training by which France was surpassing other nations in artistic productions, but the revelations at Philadelphia taught her a lesson and she immediately began the work of training men who should be competent to design artistic goods that would meet a market. England also began to fear France in the production of original designs, and she, too, started on her career of industrial training. The United States was a little slower, but finally caught the cue of industrial success, and during the last twenty years has been making such progress that American-made goods find a place in every market in the world, and instead of being rejected as American-made, they are sought because they are the products of American ingenuity, skill, and artistic design.

It is not enough that a nation should be engaged in accumulating wealth ; not enough that it should be satisfied with industrial and commercial supremacy.

There can be no prosperity in industry unless that prosperity is felt in what may be called the highest culture. The man who works for wages must feel that his condition is improved. He must play his part as a social and political factor. If social and ethical improvement does not follow industrial improvement, then industry has failed in its great purpose.

The March of Events

CHEERFUL evidence of prosperity and of the strong influence of good examples is given by the shower of benefactions that fell on our educational institutions at the close of the academic year. Mr. Rockefeller's gift of $250,000 to Cornell on condition that the university secure a like amount, the completion of Yale's bicentennial fund of $2,000,000, Mr. J. Pierpont Morgan's gift of $1,000,000 to Harvard for buildings for the Medical School, Senator Hanna's gift of $50,000 to Kenyon College, Dr. Pearsons's gift to Beloit College, which brings the total amount he has given up to $500,000 ; a conditional gift of $100,000 to Smith College ; additions to Brown University's endowment until it amounts to $2,000,000—in fact hardly an institution escaped this year. Nothing like this application of wealth to equipments for research and training was ever known before. Rich men and women of this generation have made great foundations at Chicago University, Leland Stanford University, the University of California, the Carnegie Institute at Pittsburg, the Rockefeller Institution for Medical Research, and many more ; and all our best old institutions have been better equipped by increasing incomes—Harvard, Yale, Columbia, Cornell, Princeton, Pennsylvania. Within a recent period, too, the agricultural colleges that received land grants from the National Government have been developed, and a large number of schools of technology. Within this same period the great state universities in the middle West, the West and the Southwest—for women and men alike, and without tuition fees—have grown up ; and the important independent colleges for women have been established or developed. Radcliffe and Barnard, too, are young. Add to all these foundations and developments, the great gifts for libraries made not only by Mr. Carnegie but on a smaller scale by a thousand other men, and the sums of money that are devoted to the training of youth and to the building up of the intellectual life become almost incalculable—all this, too, besides the constantly growing public school system.

Although the progress of education cannot be measured by the amount of money spent on it, it is not likely to fare well without much money, and even these ever increasing sums and more are necessary. For the time is come when stronger men must turn to the teaching of youth ; and the passing of education from its old mendicant and ecclesiastical status ought to bring, and doubtless is bringing, a large body of the very foremost men into its service. But even yet any first rate man whose business is teaching will tell you that the profession is the refuge of many second rate minds ; and doubtless any representative gathering of teachers will yet show fewer men of strong personality than a corresponding representative gathering of men of affairs. But this difference must be much less than it was even a few years ago.

A NEW ERA IN PHILANTHROPY

NOR is it to education only that rich men are making large gifts. An anonymous friend of liberal religious opinions has set aside one million dollars in Denver to establish People's churches in communities which will themselves give half the money required. A People's church is understood to be a very liberal non-sectarian organization whose work is directed rather towards the betterment of the life that is than towards contemplation of the life to come.

Bequests to charitable institutions also show a continued increase. Few gifts of this nature are reported as widely as those to education are ; but there are very many more donors to charitable institutions than to educational ones, and the total of their gifts is greater. Gifts for missionary purposes have within these recent years of unprecedented benefactions remained stationary. To some churches and for work in some fields they have indeed fallen off from the sums given in previous years. And comparatively few large gifts are made to further foreign missionary work.

As rich men become more generous, they become more businesslike in their generosity, which is another way of saying that they become more conscientious. The story recently told of Mr. Rockefeller by President Schurman, of Cornell, is typical:

Both he and his only son are devoting the larger portion of their time to the difficult problem of wise money-giving. I was greatly impressed with the thorough examination they made of Cornell University before offering their recent gift of two hundred and fifty thousand dollars. Besides their own studies, they sent an expert here to make a report, and he spent three days in which he completely investigated the University on every side—material, financial and educational. Only after finding everything satisfactory was the gift made.

Nor is it in our own land only that princely gifts are made for such purposes. M. Solodovnikoff, a Russian, who recently died at Moscow, bequeathed about eleven million dollars to establish schools and to build dwellings for workingmen in Russia. It has not been long since M. Nobel, a Scandinavian, left a great fortune, the income of which is to be given to those who do most to further human progress in invention and in discovery.

THE LEGION OF MILLIONAIRES

THE increase in the number of very rich men, as well as the size of great fortunes, is so great as to provoke midsummer journalism to make lists of them. The New York *Herald*, for instance, has lately compiled a list of 3,828 millionaires in the United States—that is, one person out of every 20,000. And the estimate is that 87 per cent. of them made their own fortunes; that only 13 per cent. of them received large fortunes by inheritance; that the same number became rich from the increased values of real estate; that nearly 20 per cent. made fortunes as manufacturers, 16 per cent. as merchants, 12 per cent. by transportation, and 10 per cent. by banking. Such a list can never be accurate; but, so long as people love gossip, it will be interesting.

A much more important fact is that the local banks in Kansas have money to lend at five per cent. that has been made by farmers growing wheat.

But even gossip affords a rough measure of the enormous increase and diffusion of riches. "There are more men in New York now who have an income of $100,000 a year than there were 50 years ago who had an income of $10,000 a year," a man recently declared who has himself risen within that period from the $10,000 class to the $100,000 class.

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their organization—the customs duties of some governments, and these are not as serious obstacles as they are supposed to be. The only difference between an international trust and a domestic one is that the monopoly is made theoretically the more complete. But we have already gone so far into successful monopolistic production that the movement is bound to extend across national boundaries.

Men who have not made up their minds to the swift coming of such an era of sweeping monopoly—or of a nearer approach to it—are lagging behind events; for consolidation is a tendency stronger than any legislative or other restraining power that has yet asserted itself. Whether the experiment lead to industrial wreck and to social oppression, or bring an era of very much cheaper production and of social benefit, we shall in due time discover; but, whatever be the result, the extension of monopoly is the strongest commercial tendency at work to-day, and it has not by any means yet spent itself. The probability is that its development has only fairly begun. Nearly every effort that has been made to check it has furthered it. The law, for instance, against railroad pooling hastened great railroad consolidations. Every well-informed railroad man now in active life expects to see practically all the great roads in the United States come at least under the practical control (if not the ownership) of a very small group of men. The same group of men will control steamship lines across the two great oceans.

Nor is it in the United States only that the tendency to consolidate is strong. In Germany our example is followed. There are reports, for instance, of a consolidation of steel makers under the leadership of the Krupps. In England the same tendency, if yet somewhat weaker, is still at work. As the movement gains strength in any one country it will necessarily gain strength in another. For instance, one reason that has been given for the organization of an international salt trust is the crude method yet used by the English company. By American management and method it is said that a very handsome profit could be saved without increasing the price.

Certainly we have passed the time when political oratory or social essays or even legislation is likely to change this world-wide tendency. The movement will work itself out, successfully or disastrously, and no exterior or artificial force is likely to check it.

A FEW EXAMPLES OF NEW TRUSTS

IN addition to the steel combination, the many railroad combinations, even more street-railway consolidations, and several unprecedentedly big financial organizations in the form of trust companies which have been made public during the past six months, there have been reported such large consolidations as these—accident insurance companies ($50,000,000, capital); glassware factories ($20,000,000); cattle growers made up of men from fifteen Western States; pineapple growers in Florida; the molasses combine, including one hundred and thirty-two cane planters; a packing combination ($7,500,000); a carpet combination ($5,000,000); the tin can trust ($88,000,000); two cereal combinations; one of $4,000,000 the other of $3,000,000; stationary engine and machinery manufactures ($50,000,000); the ship-building combination ($65,000,000); an egg trust covering a number of Southwestern States; cotton duck manufacturers ($50,000,000); the American Locomotive Company ($50,000,000); a salmon trust, to control four-fifths of the salmon fisheries of the world; the Alaskan shipping and trading companies; and others talked of or already accomplished include shovel makers; agricultural implement manufacturers ($50,000,000 or more); and watch manufacturers ($75,000,000.)

These are only a part of the combinations that were enumerated in an incomplete list published by the New York *Sun* for the first five months of this calendar year. Neither in number nor in value (although, no doubt, the nominal values of many of them are exaggerated) do they give more than a hint of the extent of the application of consolidation to the industrial problems of cheaper production and the control of markets. But they show the irresistible tendency.

PROSPERITY AND BANK FAILURES

THE high tide of prosperity continues. Our exports for the year ended June 30th reached the enormous sum (in round figures) of a billion and a half dollars—an amount far larger than on any preceding year in our history. And the crops are so bountiful that this year—1901–1902—we shall continue our exportations both of food products

and of manufactures, so far as can be foreseen, at full measure.

The financial condition of the Government, too, is very satisfactory. The surplus of the year's income over expenditures is more than $75,000,000; and in addition to this surplus, during the year the treasury bought $15,000,000 worth of bonds, thereby reducing the public debt. The available cash balance on June 30 was more than $175,000,000, which is the largest balance ever held by the Government; and there were $500,000,000 of gold in the Treasury vaults. The cutting off of a part of the internal revenue taxes this fiscal year will reduce the receipts of the Treasury by about $40,000,000, which is well; and the army, so far as can be foreseen, will cost very much less than last year. During the year $400,000,000 of high interest bearing bonds were refunded for 2 per cent. bonds. The Government, therefore, as well as the people is sharing the prosperity of the time.

The estimate is that semi-annual dividend payments in New York on July 1st amounted to $123,000,000, as against $105,000,000 a year ago. The shipbuilding of the past fiscal year was the largest since 1855—1,173 vessels of 401,000 tons.

It is to be expected that a period of abounding prosperity will bring individual failures; for the danger is of a reckless over-confidence and of temptations to unsafe methods of business. But the number of "prosperity failures" has been remarkably small. The closing of the Seventh National Bank of New York city and the failure of a firm of brokers whom the bank had injudiciously "carried," and the failure of two banks in Buffalo and one in Springfield, Mass., stand almost alone in recent months—at least since the deserved failures of a number of brokers in the gambling orgy that accompanied the "cornering" of Northern Pacific stock in April.

SOME NOTEWORTHY SPEECHES OF THE MONTH

MORE than the usual number of suggestive speeches were made during the early summer. Senator Lodge, Vice-President Roosevelt, and Secretary Hay spoke at the Pan-American Exposition, the two first in a tone properly assertive of our position and power in the Western Hemisphere, making a fresh but in no way new statement of the Monroe Doctrine. Secretary Hay spoke, on a later date, admirably supplementing the others, by emphasizing the cheerful spectacle of peace and industrial friendship from one end of the continent to the other:

"Our hearts have glowed within us as we have surveyed at every turn the evidences of the equality and fraternity of progress under skies so distant, under conditions so varying as those which obtain between Alaska and Cape Horn. God forbid that there should be in all this the slightest hint of vain glory, still less of menace to the rest of the world, On the contrary, we cannot but think that this friendly challenge we send out to all peoples—convoking them also to join in this brotherly emulation in which the prizes are after all merely the right to further peaceful progress in good work—will be to the benefit and profit of every country under the wide heavens."

These addresses have provoked much comment both at home and abroad; and this fact is, unhappily, too rare. For fewer important utterances are made in speeches-on-occasion by our public men. When they speak in the routine discharge of their duties, what they say is a part of their routine. The occasional address is a great opportunity that is too often lost.

Two among many thoughtful addresses on academic occasions have been made this year—the Phi Beta Kappa address at Harvard by Mr. Wayne MacVeagh, of Philadelphia, and an address to the students of Cornell University by President Schurman. Mr. MacVeagh sounded a note of warning (why is "a note of warning" more often sounded on academic than on other occasions?) about the growth of discontent by reason of the continual concentration of wealth. About the concentration of wealth there is no doubt. But it is not so clear that discontent grows at the same pace; for though the rich are getting richer, the poor also are getting richer. The proportion of the poor is lessening in the United States—there can be no doubt of that.

There may be grave dangers in the constant concentration of financial power, but it is not such a danger as rich men have in previous periods had to face because of suffering peasants. The danger is more likely to take a political form.

But the most widely discussed speech of all is President Schurman's, who reminded us that we are yet in intellectual bondage to Europe.

"Apart from the domain of politics and invention," said he, "America has not produced a single man or woman whose name will shine in the intellectual firmament with Raphael,

Shakespeare, Copernicus, Newton, La Place, Goethe and Darwin." * * In art, in literature, in scholarship, in science, we are a long way behind Europe."

Art, literature and science make one count in the indictment, and scholarship another. The two ought not to be confused. For scholarship is easy, even cheap, in comparison with these others which imply and require imagination and constructive power. What can be acquired by sheer dint of labor was doubtless not what Mr. Schurman had in mind when he mentioned Raphael, Shakespeare and Darwin.

ABOUT PRODUCING GREAT MEN

IT must be confessed (but without especial cause for humiliation) that we have not in art and literature and science produced any man who measures up to the level of Raphael, Shakespeare and Darwin; for these have no equals in the whole human family.

But the most interesting aspect of the subject of producing supremely great men is what may be called the superstitious aspect of it. There is no other subject that we know so little about, few others about which so much has been written. The weariest weight of dull nonsense on the bookshelves of the world are the endless volumes whose authors pretend to give a logical account of supremely great men. Why Shakespeare was Shakespeare, why he came when he did, why he did what he did—the "influences" that shaped his mind and the whole multitudinous folderol have wasted much time of industrious men and simple readers. No physiology, nor psychology, nor sociology can give the vaguest hint how we might go about producing a Shakespeare, or a Raphael, or a Darwin. The truth is if one came next door, we should not recognize him till he were dead.

And in one sense it is perfectly true that a democracy cannot afford to be straining after the production of great men, even if it knew how to produce them; for the business of a democracy is to give every man a chance to develop what small or great measure of power is in him. The great men will take care of themselves, when they come. How to entice Nature to bring them forth—that is so far beyond us that Mr. Schurman's reproach seems academic and fantastical; and, if "all our higher institutions of learning must bear the reproach," as he said, what a task he lays on our institutions of learning! They may produce scholars, but scholars are mere hewers of wood and horny handed sons of toil beside Great Men.

THE CIVIC DEATH OF PENNSYLVANIA

MR. JOHN WANAMAKER on June 13th offered the city of Philadelphia, in a letter addressed to the mayor, the sum of $2,500,000 for a number of street railway franchises that the city councils had just voted to grant for nothing. The act granting them was then in the mayor's hands, and he could have vetoed it. But he insultingly refused to read the letter, and on the same night, he signed the bill—a bill that had been passed in great haste by the councils, without even being printed; and no chance for effective public discussion had been allowed. The Legislature of Pennsylvania had only a short time before so changed the State law as to permit this action by the Philadelphia councils.

A few days later Mr. Wanamaker in a letter to Robert H. Foerderer, who, with his associates, had received these franchises without any public payment for them, again offered to pay $2,500,000 to the city, and a bonus of $500,000 to Foerderer and his associates, if they would surrender the charters to him; and he pledged himself to reduce the fare to 3 cents during the rush-hours of the morning and of the afternoon. Mr. Wanamaker expressed the opinion that these franchises would bring more than $3,000,000 at auction.

There have been many flagrant cases of the corrupt bestowal of such franchises; but this is the most unblushing instance of infamously well-drilled Legislature and the city councils that can be recalled. It shows such an abject state of public opinion, and such a powerful political ring in Philadelphia and in Pennsylvania as perhaps were never paralleled in any great commonwealth. Mr. Wanamaker's public-spirited action is beyond praise, and if such a dramatic and convincing proof of corruption or of favoritism that amounts to corruption, does not arouse the community, the commercial practice of politics will have wrought its perfect work, and a great State will show itself civically dead.

In the meantime such an occurrence gives a strong impetus to the growing movement for the municipal ownership of franchises.

THE MASSACHUSETTS VIEW OF PUBLIC FRANCHISES

IN steadfast contrast to this pusillanimous corruption in Philadelphia was the upright and business-like action taken at about the same time by Governor Crane of Massachusetts. The company that controls the street traffic of Boston had a bill introduced in the Legislature to grant it the franchise of a subway under Washington Street, in Boston, not free nor perpetually, for a term of forty years, for the payment of $6,000,000—the estimated cost of the subway. The company could reimburse itself (including interest charges) in about thirty-two years; and under this proposition it would have eight years' use of the franchise free. The House passed the bill by a large majority and as did also the Senate. Governor Crane vetoed it; and on its second passage it lacked the necessary two-thirds vote to become a law. In his veto message Governor Crane said:

"The surrender of rights which belong to the public, even for a brief term of years, should be permitted only after the most careful consideration and for controlling reasons of public policy; but no exigency has been shown to exist to justify the taking away of such rights from a generation yet unborn."

There could hardly be a sharper contrast than this between the political and therefore the moral character of Philadelphia and Massachusetts.

THE DIFFERENCE BETWEEN MASSACHUSETTS AND PENNSYLVANIA

THIS immeasurable difference between the contemptible mayor of Philadelphia and the governor of Massachusetts implies more than the difference between two individual public men. There are good men in Philadelphia and there are bad men in Massachusetts. But Pennsylvania has steadily sunk to perhaps the lowest level of civic degradation that any of the old commonwealths has ever touched; and in Massachusetts a higher level of public morality has been maintained over a long period than in any other commonwealth. The difference is not accidental nor without cause; for it is the natural and inevitable difference between a community where public office has for two generations been regarded as commercial, and a community where public office has for two centuries been regarded as an honorable trust. The commercial use of politics—office "for what there is in it"—will sooner or later bring this unutterable Pennsylvanian doom on any community. The lower type of office-seekers everywhere so regard the public service. The difference is in the supine public opinion which permits this class of men to rule, and the active public opinion that prevents them from ruling. The Pennsylvanians permit it—for the voters are to blame; men in Massachusetts bestir themselves and prevent it. It comes back to the individual citizen and his attitude towards the public welfare. Both Massachusetts and Pennsylvania are Republican States; both have been Protectionist States; both are manufacturing States; each has one of our greatest cities; both were settled by men of good English stock; both have a considerable foreign-born population; both are rich and prosperous communities—it is not in any exterior or accidental circumstances, nor in any party doctrine that the difference will be found. In Massachusetts the honor of the commonwealth is the personal concern of the mass of citizens; in Pennsylvania, the government of the commonwealth has been left to those who make a business of it. Idealism dies. Commercialism flourishes. Politics becomes simply a game of those who play for profit, when public opinion sleeps. But this is a difference in the moral character of the two communities.

RETALIATORY TARIFF SKIRMISHES

THE retaliatory tariff rulings between our Government and Russia are, so far at least, trivial, and neither party seems to apprehend serious trouble. But the commercial world shows a certain sensitiveness perhaps because of the continued talk of a possible European trade-alliance against the United States.

Following Secretary Gage's decision in February that the peculiar tax which Russia levies on her sugar-producers and the system of paying a drawback on the sugar that is exported, was a bounty on exported sugar, the Secretary levied a retaliatory duty on Russian sugar imported into the United States, as he was bound to do by the Dingley law. Russia in turn levied an additional duty on American machinery. More recently, Secretary Gage, in the same manner, levied a retaliatory duty on Russian petroleum, and Russia has correspondingly taxed our rosin and bicycles and a

few other comparatively unimportant products. It has been contended in each capital that there is a misunderstanding of the meaning of the laws, and trade between the two countries has not yet been seriously affected. But these petty reprisals are annoying.

Our exports to Russia during the fiscal year ending June 30, 1900, were about $10,500,000—an increase in five years of $4,000,000; and our imports were $7,250,000. Our trade is growing, especially with Siberia; and our commercial bodies are showing a sensitiveness even to the slightest hint of danger to their interest. The hope is expressed at both capitals that the visit to St. Petersburg of Comte Cassini the Russian Ambassador to the United States, will result in the clearing up of the misunderstanding—if it be a misunderstanding. The incidents are important, not because of any effect that they have yet had on trade, for we import no petroleum, and little sugar from Russia, but because of the hint they give of the possibility of European tariff discriminations against us.

THE THREATENED REPUBLICAN TARIFF SPLIT

THE plank of the platform adopted by the Ohio Republican Convention that by its timeliness and emphasis was more than conventional and that has provoked most discussion, is the plank in favor of reciprocity treaties. This principle has been a part of Republican platforms before; but the earnestness of the President in favor of it and the pigeon-holing of a group of such treaties in the Senate, now give renewed emphasis to the subject. A part of the Republican Senators, who hold to high protective tariff duties, resolutely oppose such treaties. On the other hand, most of the great commercial bodies of the country approve them.

This difference of opinion and of policy becomes the more important because of the tariff skirmishes between our Government and Russia, and because of the undoubted general popularity of the reciprocity idea. The possibility of a sharp difference of opinion about the tariff in the Republican party cannot be denied; and it is a possibility that the Democrats will do what they can to develop it. The humor of politics would be happily illustrated if the party that four years ago was crying out against expansion should find itself forthwith championing Mr. Blaine's reciprocity plan. President McKinley, the shadow of Mr. Blaine, and the Democrats on one side; the Protective Tariff League, the Boston Home Market Club and Senator Aldrich, of Rhode Island, on the other side—stranger things have happened than this in our political history.

GENERAL SICKLES'S INSULTING "DEFENSE" OF PENSIONERS

MR. EVANS, the Commissioner of Pensions, has done his difficult official duty well; and General Sickles has been the means of making his excellent service widely known. For General Sickles has had a public controversy with Mr. Evans, and has written to the President and to the newspapers to show why the Commissioner should be removed from office. He has said, in effect, that the civil-war veterans are vindictive mendicants, and that they will punish the political party that keeps a man in office who inquires rigidly into the deserts of new claimants for pensions.

This is the same tiresome and costly parade of our worst public scandal, that has been made at intervals for twenty years, the same insult to honorable pensioners, the same rallying cry to the mendicant ones who have brought the Grand Army into disrepute. In his letter to the President, General Sickles made this insulting measure of the character of the veterans who live in Kansas and Nebraska:

> If you continue the present Commissioner in office, you will find yourself in painful conflict with the sentiments of the Civil War veterans, who, with almost entire unanimity gave you their cordial support in November last. So strong is this feeling in Kansas and Nebraska, for example, that, in my judgment, both of those states would vote for Bryan, if an election were to come off to-morrow.

The Civil War was ended thirty-six years ago. From the beginning to the end of it there were not more than 2,000,000 different men in the military and naval service. Yet the number of pensioners has been more than 1,500,000. There are about 1,000,000 of them now—long after most of the men who served in the war are dead; and the pension-roll last year cost $139,000,000. The frauds that have been perpetrated by claim-agents are beyond reckoning; and the most pitiful display of the weakest side of human nature is that which has been made for years by the

continued additions to the pension-roll. It is a thing that men who have faith in the honesty of the masses would be glad to forget. Pitiful, too, is General Sickles's echo of the old threat that the mendicants will exert a controlling influence in politics. This likewise is something that one wishes to forget.

CUBA—THE COMING OF A NEW NATION

THE coming of a new nation into independent life, even if it be a small nation, is an event of historic importance; and we shall soon welcome the Republic of Cuba with even more than mere good wishes. It is born of our good will, and we are pledged to civilization and to ourselves to see that it fares well.

The Constitutional Convention by a vote of sixteen to eleven on June 12 adopted the Platt Amendment, without change, as a part of the Constitution. The United States is therefore, now pledged and will take sincere pleasure in helping towards the starting of a working government. As soon as the Cuban Republic can put its governmental machinery in running order, the United States troops will be withdrawn and we shall exercise no authority there except under the conditions laid down in the Platt Amendment. It will require some time to do the practical tasks of setting the new government going; but the last serious obstacle to the plan of organization is now removed.

There is hardly an example in history of the birth of a new government without the rise of a man conspicuously fit to administer it. But in Cuba no such man stands out, doubtless because the Cubans did not win their own independence. But, at the worst, they have this very great advantage over their Central and South American kinspeople—they will have our Government to save them, if they should need its help, from military revolutions as their first experience toward self-government, and from the dominating influence of foreign debts. At the best, for which there is good reason to hope, they will prove equal to their great opportunity. We shall welcome them most heartily into the family of nations.

The first and perhaps the most serious difficulty that the new Republic will encounter will be economic. When the products of Porto Rico are admitted into the United States free of duty, Cuba will be at a grave disadvantage; for the United States must be its principal market. Economic reasons have already provoked some agitation in the island for annexation to the United States. This agitation will go on and be repeated from time to time, there and here. But the Platt Amendment leaves a way for us to avoid it, as in wisdom we must.

A NEW CHAPTER IN COLONIAL POLICY

IF the Cuban Republic fares well, we shall have done more than set an oppressed people free; for we shall have begun a new chapter in colonial history. Cuba was never a colony of ours; but the point is that we have saved it from further colonial experience. In other words we have shown that the proper end of the colonial relation is freedom for the colony. Under our institutions, the colonial relation is justified only as a training for freedom. Herein consists the broad wisdom of the Supreme Court's decision in the Insular cases; our dependent territory is not irrevocably bound to us, as Mr. Justice White so clearly pointed out in his opinion. We may, we must, regard Porto Rico and even the Philippines as our wards in training for ultimate free government. The example of our dealing with Cuba may be far-reaching—may, in fact, open a wholly new chapter in colonial experience—an experience that points not towards imperialism but toward the extension of republicanism. It is an extension of republicanism such as could be made only by our Republic. No other government holds dependencies in quite this fashion, England, of course, coming nearest to it.

WORK TOWARDS A PERMANENT DIPLOMATIC SERVICE

THERE are most welcome reasons for the hope that steady progress will be made towards the building up of a stable diplomatic and consular service, including the civil service in our outlying dependencies. The appointments to minor offices in the Philippines and in Porto Rico have been made on the merit system. That is one great point won for efficiency.

Secretary Hay has transferred Mr. Loomis who represented our government at Caracas, to Lisbon; and this is a step, as far as it goes, in the direction of a permanent diplomatic service. Ministers have before been transferred from one country to another, for example, Mr. Lowell from Spain to England. But every such transfer means a step towards permanency;

and this necessary policy is in keeping with Secretary Hay's whole conduct of the entire Department of State. It is a necessary policy because by any other we shall continue to suffer from the low level of sheer political appointments in almost all places in the diplomatic service except the two or three highest posts. Diplomacy offers a worthy career for a high order of men; but the best men cannot afford to enter it unless it does offer a career.

In keeping with the same hope is the establishment of the Washington Memorial Institution in Washington. Young men who enter the Department of State as post-graduate students will bring to the Department good material for diplomatic training.

THE THIRD-TERM SUPERSTITION

STRONGER than any law on the statute-books is the unwritten law forbidding a third term of the Presidency to any man. Washington settled this matter forever, and the experience of the unwise political friends of General Grant proved how firmly the public mind is made up on the subject. Yet there was talk of a third term for Mr. Cleveland, and the injudicious friends of Mr, McKinley committed a similar silliness. There was never the slightest evidence that Mr. Cleveland ever for a moment thought of becoming a candidate for a third term; and what Mr. McKinley thinks of such a proposal was most admirably set forth in this declaration that he gave out in June.

> I regret that the suggestion of a third term has been made. I doubt whether I am called upon to give it notice. But there are now questions of the gravest importance before the Administration and the country, and their just consideration should not be prejudiced in the public mind by even the suspicion of the thought of a third term. In view, therefore, of the reiteration of the suggestion, I will say now, once for all, expressing a long-settled conviction, that I not only am not and will not be a candidate for a third term, but would not accept a nomination for it, if it were tendered me.
>
> My only ambition is to serve through my second term to the acceptance of my countrymen, whose generous confidence I so deeply appreciate, and then with them do my duty in the ranks of private citizenship.

Any man in public life gives good reason utterly to discredit his judgment of public opinion when he speaks of a third term as possible; but so long as there are men who will indulge in such talk, it was a measure of self-defence that the President took when he made this declaration. He cannot now be misunderstood, however many journeys he may take, or however many injudicious friends may presume to speak for him.

THE PRESTIGE OF THE BRITISH EMPIRE

"WE are defending the King's territory against invasion by neighbors," Lord Salisbury has declared, in discussing the crisis of the British Empire brought on by the war in South Africa. These neighbors, he said, have no complaint against the English in international law, and they are "actuated by the greed for territory and the desire of enlarging their dominions." There is naïveté or desperation, perhaps both, mingled with the truth of this declaration; for the fight has resolved itself, as fights usually do, into a fight for territory. But this was not the cause put forward in the beginning by either side. The desperate and long-drawn-out struggle goes on to the enormous embarrassment of England. And England must win it for the reason that Lord Salisbury frankly avowed:

> "We must establish in the minds of the civilized world, especially in South Africa, the conviction that, if our frontiers are violated, it will be a bitter time for those who have undertaken to do so. It is only by inspiring such a conviction that you can be safe."

If for "frontiers" we read "plans," the ethical meaning may suffer a certain wrench, but the British purpose and policy will be equally well set forth—a purpose and a policy that the Boers seemed to make necessary and which they are surely succeeding in making difficult. Witness their feat in surprising a British camp twenty miles south of Middleburg. They killed and wounded sixty out of two hundred and fifty mounted Australian riflemen, and captured all the rest except two officers and fifty men.

THE GROWTH AND MIGRATION OF THE ENGLISH

THE tight little island that is our motherland continues to breed men at a rate beyond all other lands except our own, and to send them forth to other English-speaking countries with undiminished vigor. The population of the United Kingdom is 41,500,000, which is nearly twice as large as it was when Victoria's reign began. The good

Queen saw her people double in number. The increase during the decade just ended was 3,721,000,—nearly 1,000,000 more than the increase during the preceding decade. In 1821 the population of Ireland was nearly 33 per cent. of the population of the United Kingdom. Owing chiefly to the increase in England as well, of course, as to Irish emigration, it is now less than 11 per cent. The proportion of women in the population has been steadily increasing for half a century. There are now nearly 107 females to every 100 males.

But far more interesting to us are the figures of British emigration. The recent census has given occasion to review the moving of the English during the greater part of the past century. They have never ceased to come to us in great numbers—in greater numbers than has generally been supposed. English (in addition to Irish) emigration to the United States ran in a pretty constant stream through the whole century, after 1815; and our country has continued to be the chief destination of the home-leaving English and Scotch as well as Irish. We received 190,000 of them last year. Of the total emigration to the United States from the United Kingdom since 1853, 10 per cent. was Scotch, 37 per cent. Irish, and 53 per cent. English. The interesting fact, then, is that we continue to be English in blood by new immigration, and we are not such a motley crew as we are sometimes told that we are.

Great Britain is now, next to Belgium and Holland, the most densely populated country in the world, the number of inhabitants per square mile being in several countries as follows:

Country	Population per Square Mile	Country	Population per Square Mile
Belgium	572	France	186
Holland	411	Spain	96
United Kingdom	339	China (the whole Kingdom)	95
Italy	289	United States	21
Germany	263	Russia	15

Compare France's stationary population of 186 to the square mile, with the United Kingdom's 339, ever growing and ever spreading over the world, and see the room we yet have for them!

THE STEEL WORKERS' AND THE MACHINISTS' STRIKES

WHEN this record is closed, a serious labor trouble is threatened in the steel trade; but the result cannot be foreseen.

The American Sheet Steel Company and the American Steel Hoop Company, which are parts of the recently formed United States Steel Corporation, have run some of their mills under the rules of the Amalgamated Association of Iron and Steel Workers and some of their mills without any labor-union rules, in other words, as "open" or non-union mills. Now the strike of the Amalgamated Iron and Steel Workers, which is perhaps the strongest labor organization in the country, is to compel the Steel Corporation to put all mills of the constituent companies under the rules of the union—to make them all union mills.

A vast army of workmen ceased work on July 1st, about thirty-five thousand, to force this concession, and the threat was made that all the rest would strike. But many mills shut down on July 1st, according to their custom, for repairs and because of the warm weather. For a period, therefore, no work would be done in these mills in any event. But, when this record closes, the Steel Trust stands firmly opposed to making these mills union mills, and the Amalgamated Association, which has been preparing for this contest, threatens to call the union men out of all the Steel Corporation's mills. It is a struggle for "recognition" of the union. Local minor causes have come to play subordinate parts, but the real cause of the strike is the hope of the union to compel recognition.

The Steel Corporation is uncommonly prosperous, having paid a dividend on July 1st on both its preferred and its common stock; and all its mills have many orders. The largest industrial combination and the labor union that includes all its principal workmen will be brought face to face with the crucial test of the union's strength, unless the controversy is amicably settled before the mills wish to resume work.

The May strike of the machinists for a shorter day—nine hours' work with ten hours' pay—as a rule failed; but in several localities the employers yielded the point. The machinists, therefore, gained not a general victory, but a victory in a few localities. Scientific study of the product of different hours' work in this trade has shown that men do not turn out as much per hour in ten hours as in nine, nor do they do it better; but there is a loss of product somewhat less than ten per cent. The gain of the workmen, therefore, is an

hour of leisure a day, and the loss to employers is somewhat less than a ten per cent. increase in the wages they pay.

DOES DEMOCRACY CHEAPEN LITERATURE?

IT is an instructive pleasure to read what so frank and sympathetic an observer of the larger tendencies of American life, as Mr. Frederic Harrison, says about civilization in the United States. As soon as he returned from his recent visit to us, he published in *The Nineteenth Century and After* these shrewd and interesting conclusions, among many others:

The United States seemed to him more homogeneous than the United Kingdom. "From Long Island to San Francisco, from Florida Bay to Vancouver's Island, there is one dominant race and civilization, one language, one type of law, one sense of nationality That race, that nationality is American to the core."

"No competent observer can doubt that in wealth, manufactures, material progress of all kinds, the United States, in a very few years, must hold the first place in the world without dispute. The natural resources of their country exceed those of all Europe put together. Their energy exceeds that of the British; their intelligence is hardly second to that of Germany and France. And their social and political system is more favorable to material development than any other society ever devised by man."

He received a deep impression that in America the relations of the sexes are in a state far more sound and pure than they are in the Old World.

The educational activity and earnestness of the people—the education of both sexes—attracted his attention. "The whole educational machinery must be at least tenfold that of the United Kingdom." "The numbers of the American people are so great that numerically, if not proportionately, those who are devoted to science, art, and literature are at least as many as they are in England."

Although society is in the main honest and wholesome, "the vast numbers and the passion of equality tend to low averages in thought, in manners and in public opinion."

"In casting off many of the bonds of European tradition and feudal survivals, the American democracy has cast off also something of the æsthetic and moral inheritance left in the Old World. But the zeal for learning, justice and humanity lies so deep in the American heart that it will in the end solve the two grave problems which face the future of their citizens—the eternal struggle between capital and labor—the gulf between people of color and the people of European blood."

Such hopeful views of our large tendencies and great tasks are cheering. But Mr. Harrison plunges deep into a doubt that is often expressed among us when he says, in a general summary of American intellectual activity, that "the wider the reading public becomes, the lower is the average of literary culture." Our reading public is wide, and the average of literary culture is low; but is it lower *because* the reading public is large? When a country — modern England, for instance, or even ancient Greece if you choose —contains a relatively small number of men who read good literature and a relatively large number who read nothing, does such a country have a higher average of literary culture than a country like the United States where also a relatively small number read the best literature but everybody reads something? The American theory is that by increasing the area of culture you do not spoil its finer gardens—that by teaching everybody to read you do not lessen the number who will read good books; but the aristocratic theory has always been that, when you teach everybody to read, nobody will read good books. Is there not a confusion of thought in this conclusion? Because your maid and your butcher and your shop-girl and everybody else reads slap-dash fiction will you read fewer good novels than if they read none at all? Or will you read less history or poetry because they read more magazines than the peasants of Europe?

CHRISTIAN SCIENCE AND TWO QUESTIONS

THE recent annual reunion of Christian Scientists in Boston, which was attended by 10,000 persons from all parts of the world, makes a thoughtful man pause. More than 3,000 of them went as pilgrims to Concord, N. H., to get a glimpse of Mrs. Eddy, the founder of the sect. The original church in Boston has a membership of 21,000, and the sect has 500 organized churches. It has made inroads into all social grades of life, and the membership includes men and women who have won practical success and are among the intelligent masses. One of the dogmas of this faith is thus expressed in Mrs. Eddy's book:

"Had God created drugs for medical use, Jesus and his disciples would have employed them and recommended them for the treatment of diseases."

Again, she has written:

"It was I that healed the deaf, the blind, the dumb, the lame, the last stages of consumption, pneumonia, paralysis, etc., and restored the patients in from one to three interviews, that started the public inquiry: What is it?"

Now if there is any subject about which definite knowledge has been gained during the last few decades, it is the nature of human diseases. Many diseases are as clearly understood as anything is or can be understood, and the best medical treatment has kept pace with medical knowledge. So rapid has been the practical advance in medical, and especially surgical efficiency that this progress shares with electrical progress the distinction of making the greatest practical revolution of recent times.

Yet within the last ten years there has been in the populous and most intelligent communities in the United States such an organized revival of faith in miraculous healing, in healing by prayer, as has caused the growth of a religious sect that bids fair to outnumber some of the long-established churches of Protestantism. Such a sect—for the doctrine is as old as Christianity—suggests two inquiries: Have any of even the most elementary facts of modern science found their way into general knowledge, through the public schools or through any other channel? Or are we yet in that stage of development where the religious faith of men is still wholly detached from their intelligence?

THE DEATH OF JOHN FISKE

JOHN FISKE, philosopher, historian, and master of a noble prose style, had a larger intellectual outlook than any other American of his time, and a firmer grasp on a wider range of essential knowledge. And he was a man of imagination and of large constructive power.

After winning a secure place for himself in the philosophical world by his lectures on Cosmic Philosophy, and after intimate association with all the great evolutionist thinkers, especially with Huxley, he gave his mature years to the writing of American history from the discovery to the formation of the Union—a task that he had nearly but not quite completed when death suddenly overtook him on July 4. No man has touched American history who has illumined it with a style as clear and as strong as his; for Parkman is the only other historian that we have produced who belongs in the same class; and no other has shown Mr. Fiske's philosophic grasp. His "Discovery of America" is epic in its sweep, and there are few greater narratives in our language.

Mr. Fiske himself set greater value on his evolutionary religious book than on any others that he wrote—"The Idea of God," "The Destiny of Man," and "The Mystery of Evil," wherein a reverent imagination touched his evolutionary philosophy.

The death of our foremost historian is an irreparable loss to our literature, and the loss of such a rich personality cannot be replaced to his friends. If he were not the most interesting American living, it would be hard to say who was. Prodigal, as Nature itself is prodigal—with his money, his time, his knowledge, his good-fellowship and his affection, the carelessness of his great nature about many small things (perhaps about all small things), would have wrecked the career of a small man. In him it was rather an attractive evidence of an exhaustlessness of mind and spirit. We have no such man left, either in prose literature or in philosophy.

THE DEATH OF MANY NOTABLE MEN.

IT is one of the characteristics of a Democracy that occasion turns up from its masses men of unexpected utility and power. Ex-Governor Hazen S. Pingree, of Michigan, who recently died in London, was such a man. As mayor of Detroit, he forced 3-cent street-railway fares; he secured municipal potato-fields for the unemployed; and in general he set about making the city government serve the masses of the people, with no regard to precedent and custom. As governor he pursued the same plan. Among his purposes was the purpose to compel railroads to pay taxes on the full market value of their securities. He was an honest and successful business man who came into political power with no respect for current political methods. He exerted a wide influence; he provoked the opposition of most of organized society, and he pointed the way to many improvements in the practical administration of municipal and

State affairs; for he did things without fear or hesitation. During the month Edward Moran, the distinguished painter, died; Albert L. Johnson, the energetic street-railway builder, at the early age of forty; James H. Kyle, Senator from South Dakota, who, having served one term as a Populist, was serving his second as a Republican; James A. Herne, the playwright and actor, author of "Shore Acres," and young Adelbert S. Hay, lately consul to Pretoria and son of Secretary Hay. In England Sir Walter Besant died,—journeyman novelist, philanthropist, and champion of the author's guild. He wrote, first in collaboration with James Rice, then alone, a long series of readable novels. "All Sorts and Conditions of Men" brought about the building of the People's Palace in the east end of London. Much of Sir Walter's energy for the last decade was spent in organizing English writers into a sort of trade-union to secure better treatment from publishers.

THE MONTH'S MOST POPULAR BOOKS

REPORTS from book-dealers in Toronto, Philadelphia, Albany, Indianapolis, New Haven, Detroit, St. Paul, Boston, San Francisco, Buffalo, Louisville, Cincinnati, Kansas City, Dallas, New York, Chicago, Pittsburg, Washington, St. Louis and Rochester, and from librarians in Los Angeles, Buffalo, Detroit, Bridgeport, Brooklyn, Minneapolis, Jersey City, San Francisco, Hartford, Cincinnati, Springfield, Atlanta, New York, Kansas City and Chicago, combine into the following composite lists showing the demand for books:

BOOK-DEALERS' REPORTS

1. The Crisis—Churchill. (Macmillan.)
2. The Helmet of Navarre—Runkle. (Century.)
3. The Visits of Elizabeth—Glyn. (Lane.)
4. Truth Dexter—McCall. (Little, Brown.)
5. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
6. The Puppet Crown—McGrath. (Bowen-Merrill.)
7. Penelope's Irish Experiences—Wiggin. (Houghton, Mifflin.)
8. The Octopus—Norris. (Doubleday, Page.)
9. Like Another Helen—Horton. (Bowen-Merrill.)
10. Graustark.—McCutcheon. (Stone.)
11. Tarry Thou Till I Come—Croly. (Funk & Wagnalls.)
12. Eben Holden—Bacheller. (Lothrop.)
13. A Sailor's Log—Evans. (Appleton.)
14. Sir Christopher—Goodwin. (Little, Brown.)
15. Jack Raymond—Voynich. (Lippincott.)
16. The Turn of the Road—Frothingham. (Houghton, Mifflin.)
17. Juletty—McElroy. (Crowell.)
18. Monsieur Beaucaire—Tarkington. (McClure, Phillips.)
19. Betsy Ross—Hotchkiss. (Appleton.)
20. A Journey to Nature—Mowbray. (Doubleday, Page.)
21. Uncle Terry—Munn. (Lee, Shepard.)
22. Miss Pritchard's Wedding Trip—Burnham. (Houghton, Mifflin.)
23. Up From Slavery—Washington. (Doubleday, Page.)
24. The Life and Death of Richard Yea-and-Nay—Hewlett. (Macmillan.)
25. A Pair of Patient Lovers—Howells. (Harper.)
26. The Tower of Wye—Babcock. (Coates.)
27. The Successors of Mary I—Phelps. (Houghton, Mifflin.)
28. Every Inch a King—Sawyer. (Dodd, Mead.)
29. A Carolina Cavalier—Eggleston. (Lothrop.)
30. The Observations of Henry—Jerome. (Dodd, Mead.)

LIBRARIANS' REPORTS

1. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
2. The Crisis—Churchill. (Macmillan.)
3. The Helmet of Navarre—Runkle. (Century.)
4. Eben Holden—Bacheller. (Lothrop.)
5. The Life and Death of Richard Yea-and-Nay—Hewlett. (Macmillan.)
6. Eleanor—Ward. (Harper.)
7. The Cardinal's Snuff Box—Harland. (Lane.)
8. The Life of Phillips Brooks—Allen. (Dutton.)
9. Quincy Adams Sawyer—Pidgin. (Clark.)
10. In the Palace of the King—Crawford. (Macmillan.)
11. The Visits of Elizabeth—Glyn. (Lane.)
12. Up from Slavery—Washington. (Doubleday, Page.)
13. Stringtown on the Pike—Lloyd. (Dodd, Mead.)
14. Uncle Terry—Munn. (Lee, Shepard.)
15. The Life and Letters of Thomas H. Huxley—Huxley (Appleton.)
16. When Knighthood Was in Flower—Major. (Bowen-Merrill.)
17. Babs the Impossible—Grand. (Harper.)
18. A Sailor's Log—Evans. (Appleton.)
19. The Master Christian—Corelli. (Dodd, Mead.)
20. The Octopus—Norris. (Doubleday, Page.)
21. Elizabeth and Her German Garden—Anon. (Macmillan.)
22. Her Mountain Lover—Garland. (Century.)
23. The Gentleman from Indiana—Tarkington. (Doubleday, Page.)
24. The Mainwaring Affair—Barbour. (Lippincott.)
25. Like Another Helen—Horton. (Houghton, Mifflin.)
26. Napoleon, the Last Phase—Rosebery. (Harper.)
27. To Have and to Hold—Johnston. (Houghton, Mifflin.)
28. Graustark—McCutcheon. (Stone.)
29. Miss Pritchard's Wedding Trip—Burnham. (Houghton, Mifflin.)
30. In the Name of Woman—Marchant. (Stokes.)

THE WORLD'S WORK

SEPTEMBER, 1901

VOLUME II NUMBER 5

The March of Events

ON July 4th President McKinley issued a proclamation opening to white settlers the lands in Indian Territory purchased by Congress from the Kiowa, Comanche, Apache and Wichita tribes. This tract, which cost two million dollars, included between four and five million acres, and was the last Indian reservation of any size which could be secured and "homesteaded" for the public benefit, so the occurrence attracted even more than the usual attention from Western home seekers.

The four tribes mentioned received a substantial allotment for a permanent reservation; 50,000 acres were retained in the Ft. Sill Military Reservation; a tract of 10,000 acres is wisely held for a new national park in the Wichita Mountains; and the remaining 2,000,000 acres and more have been presented to 13,000 American citizens for farms and homes. The only initial payment required under the homestead law is a filing fee of $14; at the end of five years the holder must pay the Government $200 for his one hundred and sixty acre plot, but he is exempted from all taxation during this time. The land is rich, well wooded and watered and admirably adapted to raising wheat, corn, cotton and all the standard crops, as well as to grazing. Many of these farms will be worth several thousand dollars by the end of the first five years—much more if the lucky owner should locate close to a town site—so the eagerness of the would-be settlers is not difficult to understand. Over 24,000 registered in a single day at Ft. Sill and El Reno, and when the lists finally closed there were over 160,000 applicants for the 13,000 homesteads.

Every great land opening hitherto has combined most of the elements of a go-as-you-please race and a free fight. Thousands of men and women would gather along the boundary line of the new territory—failures who hoped to retrieve themselves, men from the East and North, who had emigrated to make homes here, adventurers and roughs inflamed by the idea of getting something for nothing, women school teachers and clerks, seeking a living away from the familiar drudgery—every class and type would be represented. This motley throng—in wagons, on mules and horses or afoot—would dash away at a pistol shot in a mad scramble for the choicest claims, riding each other down recklessly in the wild excitement, the rougher element "jumping" the claims of those who dared not resist. Even after the damage to life and limb ceased the bountiful crop of lawsuits arising from conflicting titles always kept the new settlement in an uproar. The whole proceeding was distinctly an unseemly one.

So the President (to whom a special act of Congress had given authority to prescribe some better plan) and his advisers devised a method of drawing lots for the Kiowa land. The crowds who thronged to Lawton and El Reno all through July filed applications to take part in the drawing at the land offices established for the purpose. Each applicant whose qualifications were satisfactory received a card with his name, descriptions and credentials, which was placed in an unmarked but numbered envelope. On the day of the drawing, beginning July 29th, these 165,865 names were placed in two big box-wheels (these being the substitutes for the "hat or larger receptacle" of the statute), and the names were drawn out by ten boys "all under age and consequently not registered for claims."

THE SCENE ON THE OPENING DAY

"Twenty thousand excited, expectant people crowded about the platform. When finally the ten boys were lined up before the two wheels and awaited the word to draw out the first envelopes, a great cheer arose. A moment later, when a deputy marshal called loudly for order, the crowd was stilled instantly.

"Colonel Dyer, one of the three commissioners, read the President's proclamation relating to the drawing. The wheels containing the envelopes were turned repeatedly to insure a thorough mixing, and then the drawing began.

"The first envelope taken from the wheel contained the name of James R. Wood of Weatherford, Okla., who had registered for a homestead in the Lawton district. Mattie H. Beals of Wichita, Kan., whose birthplace is in Missouri (and who was a telephone operator at Wichita at a salary of $9 a week), drew No. 2, also in the Lawton district. The crowd made a great demonstration at the announcement. Without doubt Mr. Wood and Miss Beals, who thus have the right to make the first filings, will select the two quarter-sections which adjoin the Lawton townsite district, and which are believed to be worth $40,000 each. When Colonel Dyer announced that the woman's age was twenty-three and her height the same as that of Mr. Wood, 20,000 persons shouted in chorus: 'They must get married.'"

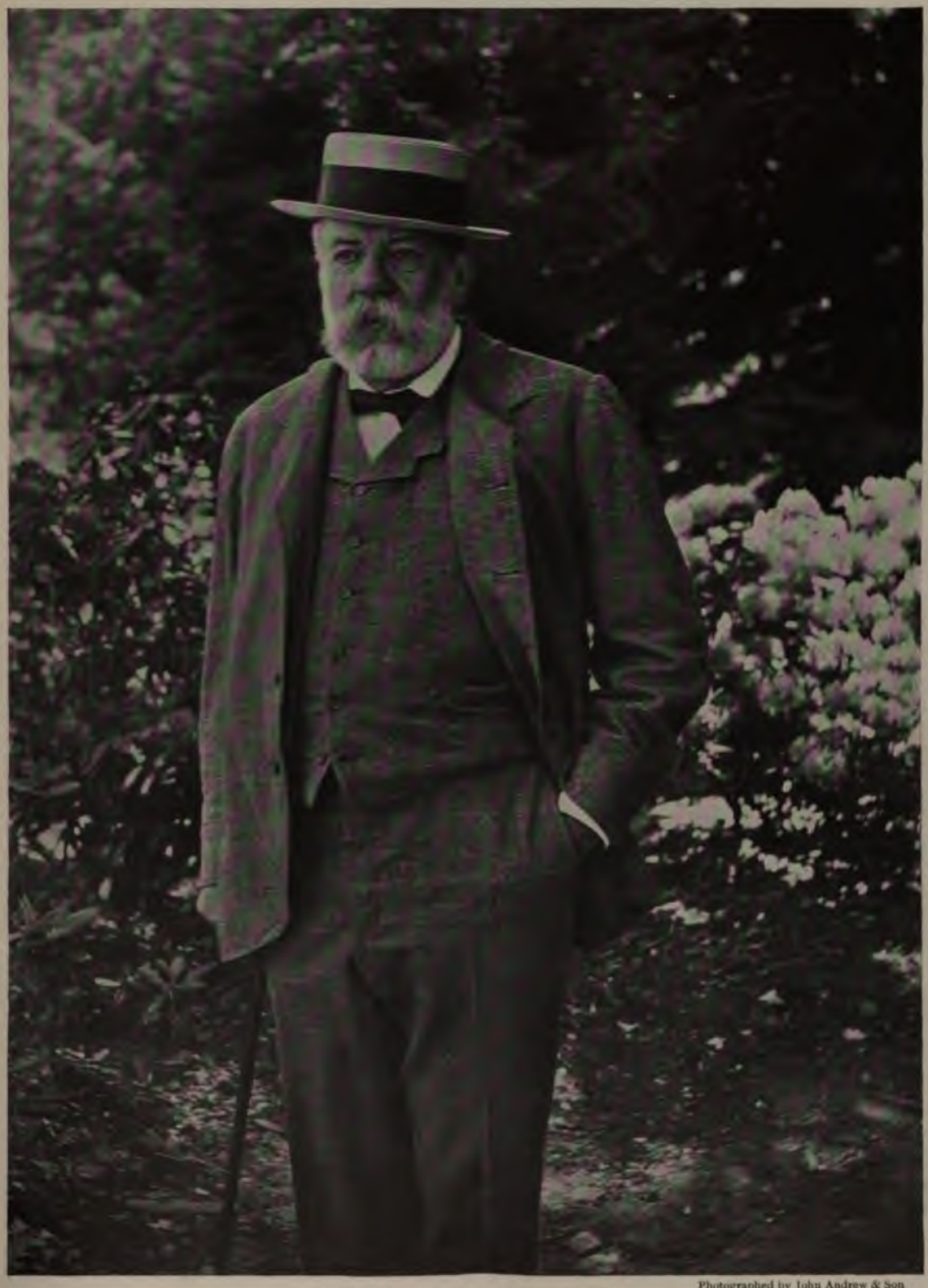
One thousand names were drawn the first day, 2,500 the next, and so on until the entire 13,000 for which homestead could be supplied had been exhausted. The lucky ones, all of whom had inspected the ground beforehand and made choice of the best spots, went into the promised land, entering their claims in the order of their numbers; the far greater portion of the crowd who had been unsuccessful went back home, or anathematized the Government, or wrote to the papers in high moral indignation at the spectacle of Uncle Sam conducting a lottery, or entered suit to test the validity of the titles thus acquired—according to their several temperaments.

The Assistant Attorney General has vouched for the legality of the plan employed, and an attempt to secure in the names of a number of Indians an injunction restraining the Government from distributing these homesteads proved fruitless; while other schemes to secure choice spots under cover of the law of 1887, giving any homeless Indian the right to make entry for public land not in possession of a homesteader, will probably be equally abortive. So the lucky 13,000 need not be at all worried; they are probably a permanent part of the great army of over a million homesteaders who have taken advantage of our Government's paternal offer to all comers of an opportunity to make a farm home without any preliminary expenditure.

It is a picturesque record even in its quieter aspect; and most dramatic is the swift leap into being of full-grown towns where a large tract of land like this Kiowa region is suddenly thrown open. This issue of THE WORLD'S WORK goes to press just as the drawings are taking place; these two million acres are still a fertile but uninhabited wilderness. By the time the magazine is on the newsstands this section will pulse with human life and effort. It will contain (temporarily) at least 100,000 people; three incorporated towns will have come into being — Hobart, Lawton and Anadarko — with streets, stores and dwellings (the business and residence lots in which are auctioned off to the highest bidders by Government officials); and instead of an Indian reservation it will comprise Kiowa, Comanche and Caddo counties, in a territory rapidly approaching Statehood. It is a splendid chance to study the adaptability, and colonizing force, and capacity for self-government of the American people.

LAND GRABBERS OF THE NORTHWEST

SINCE the homestead law went into force thirty-five years ago fully 190,000,000 acres have been taken up under its provisions. It has been an incalculable agency for good in developing the resources of our



Photographed by John Andrew & Son

CHARLES S. SARGENT, LLD.

Director of the Arnold Arboretum

country, particularly the trans-Mississippi region. Like all beneficent laws, it has not escaped abuse. Within the last few weeks Attorney-General Knox and the Secretary of the Interior have unearthed a gigantic system of land swindles in Idaho and Montana. They promptly got out ten indictments for perjury and subornation of perjury in matters of land transfer, and suits have been entered against some millionaire landholders over rights involving some hundreds of thousands of acres worth several million dollars. Strenuous efforts are being made to drag off these alert public officials by a political leash, but the scandal has been given sufficient publicity to make this extremely improbable.

The methods upon which these Northwestern land grabbers have operated have been so barefaced that they must have been brought to justice long ago but for political influence and in all probability direct bribery.

There have been cases where fifty men have settled on contiguous sections, swearing the land was for their own use, and then, have unanimously sold out to a single lumber company. No sane man could doubt that the so-called independent locators were really the employees of the company; and yet the agents of the local land office have often been remarkably blind or inert.

It is to be hoped that these prosecutions will be pressed to the utmost. Leaving out of the question the criminality of the act, we cannot longer afford to be prodigal of the public lands; for though there are nearly a billion acres still vacant and subject to entry, only a small proportion of this is suitable for agricultural purposes without irrigation, and no privilege of the nation should be more jealously safeguarded than that of offering to every citizen the chance to make a living from the soil.

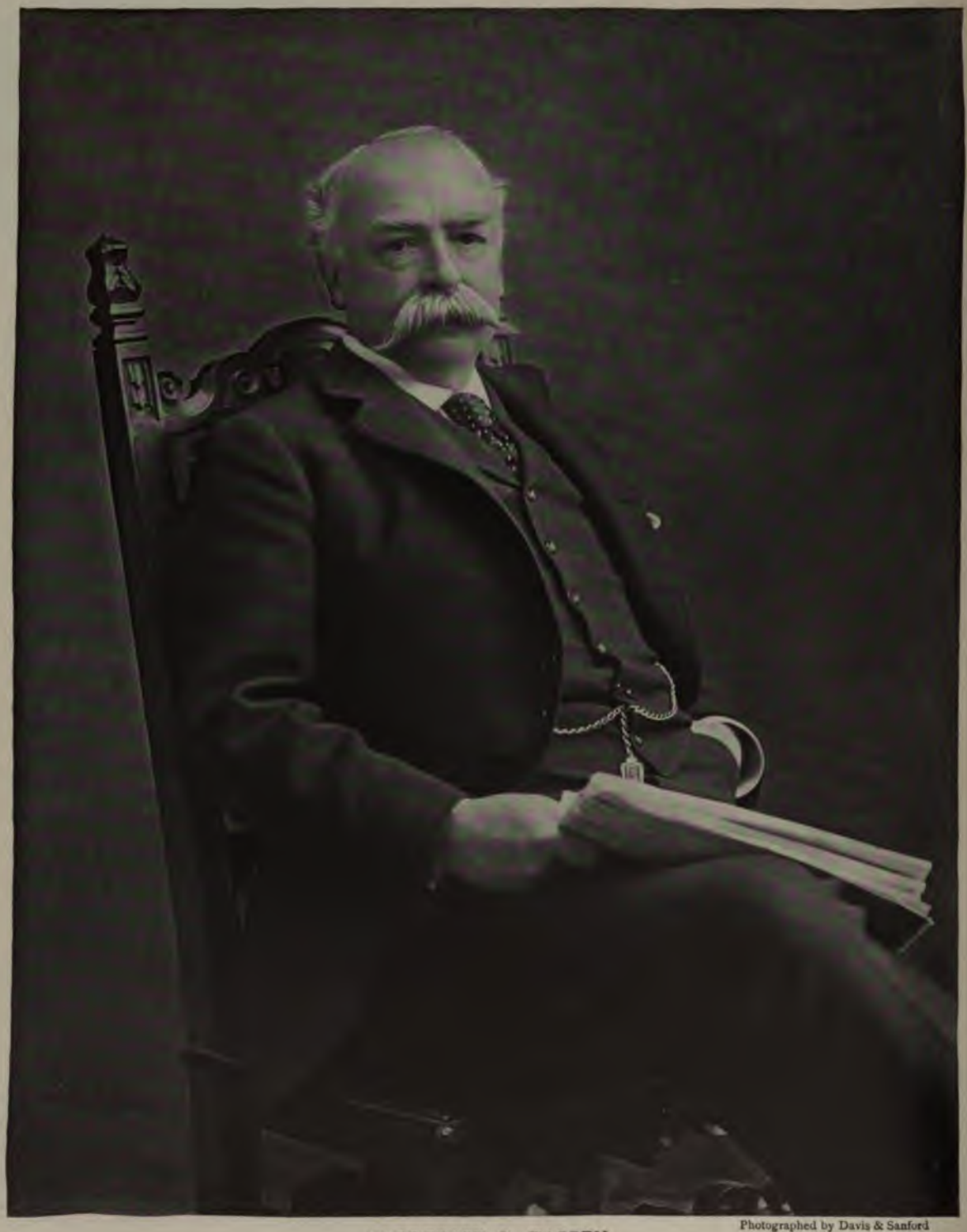
OTHER MOVEMENTS OF POPULATION

IN Minnesota, Wisconsin and Michigan settlers are attracted not only by the still plentiful homestead lands, but also by the cut-over timber lands and by the railroad grants which the companies—especially the Northern Pacific Railroad—try to dispose of as rapidly as possible. There are lands in Northern Michigan which were considered so worthless a decade ago that lumbermen would not take deeds to the properties on which they purchased the timber rights—since the land was actually not worth the taxes. It has been discovered that these despised lands grow as fine potatoes as can be produced, and the last few years have seen a steady influx of farmers, largely Scandinavians, and a resultant remarkable rise in prices. It is estimated that 150,000 settlers moved into the Northwest last year, and a larger number still, probably fully 200,000, will be added to the population during 1901. This has resulted in creating a very brisk market for farm properties, till it is now quite common for the owners of land worth $50 to $100 an acre to sell out and move further on to a less developed region, or even to the edge of the wilderness again—richer by some thousands of dollars.

THE TORRENS LAND LAW

OF course the speculators have seen their chance in this activity, and have vied with the farmers in land buying and selling; and the business has assumed such proportions that special attention has been called to the recent adoption by the State of Minnesota of the Torrens Land Law, which goes into operation in September.

By this system—which like the secret ballot is an importation from Australia—the business of transferring land is so simplified that it is well nigh incredible the plan has not been universally adopted in the United States. Its fundamental idea is that each land title is registered at the Register's office, and the state, having thoroughly searched the title, issues a certificate of ownership to the holder. All subsequent transfers, liens, mortgages or conveyances of any sort are entered upon this certificate, duplicate records being kept, carefully indexed, by the officials. The Government guarantees the titles to the holders of these certificates. The total initial expense is only $24, and of subsequent registration only $3. Under the present system, whenever a piece of land is transferred or a mortgage is given, a lawyer must be employed to search through a voluminous mass of records, often in a shocking state of confusion—and if the same parcel is sold again next year, the whole process is once more gone through with from the beginning. The system is inconceivably cumbersome, antiquated and expensive. Until the advent of the private title guarantee companies the



Photographed by Davis & Sanford

FREDERICK D. TAPPEN

President of the Gallatin National Bank, New York

purchaser of a piece of property had no security whatever of the validity of the transaction. He was compelled to depend entirely upon his confidence in his lawyer. In New York City alone there are each year nearly 15,000 land conveyances, amounting to well over $100,000,000: no city in this country has more to gain from such a simplification, for in no other city is the number of transfers in proportion to the total number of holdings so large. Yet this reform, long tested in Australia, and in use in many parts of Continental Europe for hundreds of years, which has been adopted in Massachusetts for the last two years, which has been tried with eminent success in Chicago, which Minnesota will put into operation this month, which is under consideration in half a dozen other states, and the adoption of which in New York was agitated fifteen years ago—seems as far away as ever at this date.

It has been objected that the original Torrens Act gave a judicial and discretionary power to the Register not in conformity with American law; and this caused the law in Ohio and the first Chicago statute to be pronounced invalid by the courts. But the necessary adaptation to American institutions is really a simple matter and has been successfully carried out elsewhere; and the causes for the slowness of adoption seem to be the usual extraordinary conservatism of legal enactments, and the fact that the people who know most of the absurdities of the present law, the lawyers and title guarantee companies, are constant beneficiaries by its provisions. A general change to the Torrens system would inevitably drive out of business the private companies who guarantee titles, and it would make the services of a lawyer quite unnecessary in land transference. Few classes of men can believe desirable any change in long-established custom which would dispense with their own services; but it is an evidence of the hurry and absorption of our time and country, as well as of the lack of interest in public matters, that the people have not before this demanded this reform.

AN UNREASONABLE STRIKE

THE failure of the great steel strike on the platform advanced at the start by President Shaffer of the Amalgamated Association was inevitable. There was no charge of any injustice to the laborers, of too long hours, or too little pay; the Association met the officials of the sheet-steel and tin-plate companies with the one demand, that a union scale be signed for all mills, or they would tie up every plant controlled by the United States Steel Corporation. Many of these mills are operated by non-union workmen under special agreements between company and laborers: to unionize them in the face of these contracts would have been grossly unjust to both; and after offering everything possible except this, the ultimatum was refused. The very success of the strikers in calling out men from unionized mills would in the end have proved the ruin of their cause, for their resources were pitifully inadequate even for their immediate organization during a protracted term of idleness, and the grim realities of need have always proved too much after a while for the men, except when they were sustained by public opinion and the consciousness of resistance to unfair conditions. Both were lacking in this case, and as this is written the talk of settlement is upon a basis less advantageous to the workmen than that offered them a month ago.

THE REAL ISSUE OF THE STRIKE

THERE has been a larger crop than usual of the customary hot-weather labor troubles. The sweatshop tailors in New York, the Reading firemen, the iron foundry workers at Derby, Conn., the machinists in half a dozen cities, the Frazer river salmon fishers, the miners of Colorado and Washington, the Troy collar makers, the egg candlers, the teamsters, longshoremen, packers, porters, warehousemen and dock workers of every kind in San Francisco—all have been on strike during the past month; in Chicago a large force of carpenters struck because they were not allowed to have as much lemonade as they wanted. But none of these had the significance of the steel strike, in which the powerful Amalgamated Association tried to wrest from the largest combination of capital in the world the right to manage its business affairs. Had it succeeded, a long step would have been taken towards the trades-unionism which has for years throttled English industry, reducing labor to a dull dead level, putting a premium on mediocrity, resisting to the uttermost the introduction of labor-saving machinery and latest improvements in manufacturing — by which alone can industrial

supremacy be maintained in these days of world competition. It appears clearly that the non-union mills of the steel corporation in this country are better equipped and more economically conducted than those in which the management has been hampered by the jealousies and the obstructive policy of the labor unions.

Nobody questions nowadays the desirability of combinations of workmen. But if America is to attain the great commercial and industrial destiny for which she seems marked out, she must go into the conflict free from any hampering restrictions. Most of the men who are actually managing the vast steel business today are in these positions because they have proved themselves more competent than their fellows, and stagnation and decay are the inevitable results of a transfer of power from the true generals of industry to less able hands. The country is to be congratulated, therefore, that the steel plant owners have stood firm on this point, and decisively defeated a tendency so deplorable in its effects.

SWEEPING INJUNCTIONS

DURING the labor troubles in Connecticut, Judge Gager granted one of the most comprehensive injunctions yet issued. The strikers were restrained from interfering in any way with the new laborers, from boycotting, intimidating, persuading or threatening them, from picketing or patrolling the factory, and from all concerted action interfering in any way with the employees or business. This seems almost too sweeping a prohibition, for it forbids lawful actions as well as unlawful ones; and the judicial opinions in other sections concur in enjoining only acts which are violations of established statutes. In Paterson, for instance, a temporary injunction against picketing by the vice-chancellor was overruled on this ground, and other judges—while upholding firmly the right of any company to employ whom it choose, on any terms it can make, and the inviolable right of laborers to work for anybody for whatever pay they are willing to accept—are careful to draw the same distinction. While human sympathy is apt to obstruct one's judgment in such a case as that of the poor fellow who committed suicide because his friends ostracized him for returning to work, it is clear that nothing could be more unfortunate and conducive to lasting friction than legal injustice toward organized labor, or a conviction on its part that it would find the courts prejudiced in favor of its adversaries. Our law must be above reproach as a respecter of persons or vested interests.

THE WESTERN DROUGHT

AS this record is closed, news comes of the breaking of the prolonged drought in the Central West which has occasioned many sensational estimates of crop failures. For about a month the temperature in Missouri, Iowa, Kansas, Nebraska and adjacent states ranged from ninety to one hundred and ten degrees. At Topeka the Kansas River was so dry that grass grew in the centre of the channel, and fish were scooped out with shovels in parts of the Platte. Pastures were burnt so severely that growers of stock rushed cattle, sheep and hogs to market lest they would be left with no food for the animals. The unprecedented heat and a flood of alarmist reports sent the price of corn up to nearly sixty cents a bushel on the Chicago Exchange, about double the average price at this date, and the consequent reaction caused a panic on a small scale. Since the long-hoped-for rains have reduced the temperature and checked the withering drought in the corn belt, it has been possible to get a saner opinion of the situation. The early corn crop is ruined and is being gathered for fodder, while the farmers are hurriedly replanting in hopes of late fall harvests. The experts figure that about a third of the total corn crop is gone, and look for a total figure of 1,500,000,000 bushels, the estimate on July 1st having been for something over 2,000,000,000. Fortunately the yield of wheat, even in the drought-stricken states, is the largest on record, the present indications for the entire harvest showing an aggregate of over 700,000,000 bushels, or 25,000,000 more than the high-water mark set in 1898. It is believed that the Russian wheat crop will be greatly below the average, since it has been greatly injured by much the same conditions which have prevailed in Kansas and Missouri.

A LESSON IN IRRIGATION

ONE unexpected result of this great disaster to western agricultural interests has been to furnish the sufferers with an object lesson of the value of irrigation more

effective than all the literature ever published on the subject. While the winds have for weeks blown steadily from over the arid plains upon the cornfields, destroying probably five hundred million dollars' worth of farm produce, the irrigated valleys of western Kansas and eastern Colorado, where droughts have no terrors and water supply is under scientific control, have been producing unusually plentiful crops of alfalfa, which yields three or four harvests a season, and which is now worth almost twice its ordinary price. Moreover, it is evident that had these desert lands been even partially reclaimed, much of the damage to adjacent regions would have been avoided. It is a lesson which the practical Westerner will take to heart, and the result should be a new impetus to the irrigation of arid lands on a large scale.

It is a striking evidence of our agricultural prosperity that this blow is received so calmly by the western farmer. He is in better financial condition than ever before; and while there may not be as much for luxuries this year in some sections, and the railroads will hardly have the business they expected, there is a noticeable absence of talk about panic or mortgage foreclosures or the consequent political restlessness which was a feature of the trans-Mississippi country after the bad times of 1894. The farmer now has a reserve fund of money and hope; and he is neither grumbling nor discouraged.

THE GROWTH OF TELEPHONES

THIS altered status of the formerly mortgage-ridden agricultural region is evidenced in many ways, but by none more forcibly than by the farmer's adoption of the improvements of modern science. He has been setting up automobiles in Kansas and the Middle West; improved farm machinery and implements find a ready sale; personal and household luxuries recently unheard of are now everyday matters; rural free delivery of mails and long-distance trolleys are putting him into closer communication with the cities; and, above all, he has been solving some of the most difficult social and industrial problems of agricultural life by the use of the telephone. The extension of independent telephones has been much accelerated by a recent decision against the parent concern in the matter of the "Berliner patent," which, while not basic, is a very important and comprehensive instrument; and though the fight will in all probability be carried to the Supreme Court, the small companies, especially in the rural districts, are multiplying with astonishing rapidity. A monopoly or large combination is necessary to get the benefits of the long-distance telephone, or of the ordinary local system in very crowded communities, where its efficiency depends upon any business man's ability to call up any other telephone subscriber without having more than one installation; but the isolated country residents and farmers have found their small organization of the utmost service in putting them into communication with one another, and with the nearest centre of population. They are enabled to shop; to keep in touch with what is going on, particularly as to the vitally important commercial happenings and movements of prices which used to be a closed book; and to ameliorate, especially by evening talks, the loneliness and social isolation which have been one of the greatest drawbacks to farm life. Within a radius of thirty miles around Chicago there are eighteen hundred farmers who can be reached by telephone; where they do not adopt the three-to-the-mile arrangement, giving a joint service at a dollar a month apiece, many farmers in this region rig up a home-made line, two or more stringing wires between their houses, along the fences, or on bean-poles, at an expense of about ten dollars each. In Maryland, and indeed all over the country, there are thousands of rural subscribers to small local independent systems which gradually grow and form connections with each other. The result has been many minor improvements and simplifications which have reacted and still further increased the ramifying network of telephone wires, each little centre spreading out arms to the other adjacent ones like a great system of nerve ganglia. The Department of Agriculture reports that the demand for rural free delivery has been greatly lessened by the advent of these country telephone systems.

In the cities the telephone is also making its way with a speed which needs only the inevitable further cheapening of the service to double or quadruple. We are still far behind some European countries in this matter; in Stockholm, Sweden, for instance, the low rates have increased the use of telephones till there is now one for every fourteen inhabitants. An important judicial decision in

South Carolina (due to competition between two companies, one of whom refused to continue a citizen's telephone unless he gave up the other service) has pronounced the telephone a common carrier, subject to all the regulations of such corporations

DESPATCHING TRAINS BY TELEPHONE

THE newest field which has been invaded by the telephone is that of train-despatching. The Delaware, Lackawanna & Western Railroad is to substitute a telephone system throughout its lines, in place of the present telegraphic one, as soon as the long-distance wires can be erected. It is claimed that the existing method can be enormously simplified, and that by a phonographic attachment, permanent records of the orders can be taken which should eliminate many of the present causes of accident. When one considers the possibilities of long-distance communication which follow in the wake of Prof. Pupin's discoveries, it becomes evident that the telephone is still in its infancy as an annihilator of distance.

MORE LIGHT FOR THE TENEMENTS

A EUROPEAN scientist claims to have discovered in "sunlight baths" a direct and permanent cure for lupus and many other diseases—and has founded a hospital in which his patients can be scientifically treated with sunlight on every portion of the body. That disease appears in the absence of sun and air is a sad scientific truth impressed upon the public mind ever since the great cities began to huddle people together—in a manner in which no farmer would house his pigs. From the point of view of one who believes in the brotherhood of man, the condition of the poor of New York or Chicago or San Francisco is simply a nightmare. To the philosopher it is a barbarously unenlightened waste of human strength and life. From a purely selfish standpoint, this state of affairs is a constant menace to the health of every one of the city's more fortunate residents.

It may safely be said that the New York Legislature of 1901 was responsible for nothing else so important as the "Tenement House Law," the two final sections of which (relating to prostitution in the tenements) became operative on the first of July.

Among the provisions of this statute is one that does away with the horrible "dumbbells"—that is, houses "with two-feet airshafts having no outlet to the yard or the street, and no intake at the bottom permitting the free circulation of air, and which are thus chiefly useful as a vent for the conveyance of the bad odors from the lower apartments to those above, and as receptacles for the collection of indescribable filth." The new law requires that every living room shall have a window upon the street or yard or upon an airshaft of not less than twenty-five square feet opening to the sky without roof or skylight—and apartments already constructed must have either this or an opening sash window leading into a room so situated. No room in a cellar or basement can be occupied for living purposes without a written permit from the Board of Health, water must be furnished in reasonable quantity on every floor, and the spaces beneath all sinks must be left open. The height of houses, the percentage of lot occupied, the width of yards, the ventilation of courts and halls, the size of rooms—even the privacy of new apartments is carefully regulated. The Tenement Commissioner who, with the department he will organize, is to carry out this admirable law will not be appointed until the first of next January; and it is probable that the Health Board, which is meanwhile entrusted with its enforcement, will do little besides circularizing house-owners to familiarize them with its provisions. It will put into the Commissioner's hands the power to reach the pockets of those miserable creatures who squeeze high rents out of the unfortunate and degraded occupants of their tenements, and it will present the consideration of a thousand dollar fine to the owners who through careless ignorance permit their agents to do the same thing.

The first effect of the enactment was the hurried filing of more than a thousand plans between January 1 and April 12, to take advantage of the old law. It transpired last month that in this rush an unscrupulous architect filed from fifty to a hundred "dummies," taking any plan he happened to have and entering it for some vacant lot, regardless of the fact that it did not at all fit the space. He subsequently altered these radically, thus filing and erecting old style tenements long after the law was in force; and the connivance of some official of the Building Department seems to have been secured in this dishonest practice. The publicity given to the evasion

of the law by Mr. Robert W. DeForest and his associates has probably frustrated the scheme; and it will merely serve to make the Tenement House Committee watch such matters even more carefully. The reputable builders and architects, many of whom declared the new statute would be ruinous to both owner and tenant are now finding little difficulty in meeting its provisions—with plans for apartments and tenements which must rejoice the heart of any one familiar with the existing conditions.

A "prominent architect" has made in the *Real Estate Record and Guide* some very interesting predictions as to the ultimate effects of the measure. He looks for a great movement to the suburbs and two-family dwellings in place of tenements; indeed he asserts that in twenty years New York will be "a city of big apartment houses and small one and two story dwellings."

FLOATING HOTELS AND FREE BATHS

MR. JOHN ARBUCKLE, the famous merchant, has been doing a good work for the dwellers of the city, and carrying out a pet scheme of his own, by opening to the public a fleet of "floating hotels" during the heated term. Each evening the staunch full-rigged ship *Jacob Stamler* and two attendant yachts have sailed down the bay, carrying its patrons to pure air and a healthful night's rest away from the city's smoke and roar. On Saturdays the trip is prolonged till Monday morning.

It is an interesting and novel experiment, which should succeed, and which emphasizes the loss to the great city's residents, of the water-front as a location of homes. Almost universally the choicest dwelling-places have been given over exclusively to docks and manufactories and business, while the workers who do not get away to summer resorts swelter and lose strength for lack of the breezes which might be found by the water-side.

Less novel, but even more important, is the movement for free public baths and the establishment of shower baths in connection with the city's school-houses. Lack of conveniences and of privacy in the crowded tenement homes make the extension of New York's present inadequate system—two overcrowded bath houses—a crying necessity from every point of view. We cannot afford to neglect any agency which so surely and vitally improves public health and morals.

THE GROWTH OF CITIES

THE movement of our population to the great cities instead of slackening continues with accelerated speed. During the last decade the United States added thirteen million to the sum of its inhabitants. There has been an enormous movement of both immigrants and native Americans to the sparsely settled regions of the West and Northwest, yet the percentage of the total population living in cities of 8,000 inhabitants or more has risen from 29 to 32.9. A hundred years ago this percentage was only 4. In the 116,000 square miles occupied by Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Pennsylvania, seventy-two people out of every hundred are to be found in cities of over 4,000. This is a logical outcome of the extraordinary industrial activity which has lately characterized American effort; and it is surely not fanciful to see in the movement merely another application of that principle of combination which now dominates the whole world of business and industry. The world seems to have just waked up to the unlimited application of the copy-book maxim as to the strength of union, and the City is merely a Residence Trust.

It is difficult to look forward in this direction, for one feels instinctively that some counter influence must arise to check this mad rush townwards. Otherwise that dismal prophecy which Mr. H. G. Wells introduces into one of his stories will become a reality, and the monstrous city, swollen to incredible proportions, will drain every vestige of life from the country. Even today the realization comes upon one with something of a shock that over twenty-eight million of our people are living in a space probably aggregating not more than 5,000 square miles, while the other forty-eight million are spread over 3,000,000 square miles.

AMERICA'S GREATEST POPULATION CENTRE

KEEPING in mind the fact that there are still less than twenty-six inhabitants to each square mile of our territory, the following data by Mr. J. H. Pence are impressive:

The accompanying map shows the number of persons to each square mile in America's greatest population centre—New York, Kings,

Queens and Richmond counties of New York, and Hudson and Essex counties of New Jersey. These six counties contain an area of considerably less than 500 square miles—about one-half the area of Cook county (Chicago), Illinois—but have a population of 4,200,000, an average of 8,500 persons to each square mile. Some idea of the immensity of these figures may be gleaned from the fact that were the entire country thus peopled it would have a total of nearly 30,000,000,000, or thirty-five times as many persons as

Diagram Showing
The Density of Population in Kings, Queens, Richmond, Essex and Hudson Counties.
The figures represent the number of people to the square mile in this region.

the estimated population of the earth. In no other place in this country is there anywhere nearly so dense a gathering of people as on Manhattan Island. This is shown by the following list of counties, where the average exceeds 1,000 to the mile:

Counties	People per sq. mile
New York	22,076
Kings, N. Y.	15,150
Suffolk (Boston), Mass.	11,990
Philadelphia, Pa.	9,951
Hudson (Jersey City), N. J.	8,977
San Francisco, Cal.	8,167
Essex (Newark), N. J.	2,827
Cook (Chicago), Ill.	1,851
Orleans, La.	1,457
Milwaukee, Wis.	1,447
Queens, N. Y.	1,185
Richmond, N. Y.	1,176
St. Louis, Mo.	1,149
Hamilton (Cincinnati), O.	1,021

All of these counties contain populous cities, but many of them also have a considerable rural area that reduces the average of density. Considering the cities alone the following is the result:

Cities	People per sq. mile
Greater New York	11,160
Chicago	8,911
Philadelphia	9,951
St. Louis	9,430
Boston	13,032
Baltimore	16,156
Jersey City	15,880
San Francisco	8,167
New Orleans	1,457
Milwaukee	12,405
Cincinnati	8,808

There are smaller cities with smaller areas that are denser than many in this list, owing to the fact that in various States the custom of incorporating suburbs is different; but these are, as a rule, not of a size sufficient to be termed population centres, except Cleveland, O., with an average of 11,569.

BAD GOVERNMENT OF OUR CITIES

CONFRONTED by such figures as these the importance of municipal affairs in our great cities takes on a new aspect. The government of New York, Chicago and Philadelphia directly affects 6,429,474 people, nearly a tenth of our whole population. How are these vast public interests faring in the hands of those who have them in charge?

The pitiable condition of Philadelphia culminated in the infamous "street railway grab," chronicled in these pages last month, which has made her a synonym for political corruption in every newspaper of the land. The franchises, deliberately stolen from the public and granted to a political ring in the face of Mr. Wanamaker's offer of $2,500,000 for them, are now said to have been sold by these harpies to an existing traction company for a sum almost as large. It is possible that an aroused public sentiment may bring this humiliating case of highway robbery into the courts, but the disheartening fact would remain even then that it is merely a flagrant example of the indescribable political corruption which has marked the history of Pennsylvania ever since she has been dominated by Quay and his band of spoilsmen.

It would not be difficult to find almost parallel cases in Chicago; and as this is written the newspapers are chronicling in scare-heads the virtual bankruptcy of "the second city in the most prosperous nation of the world." Mayor Harrison, failing to raise the assessed valuation of property above $100,000,000, has instituted rigid economy in every department; but he declares that—owing to the above, to the city's antiquated charter, excess of tax-levying bodies, and absurdly low debt limit—"policemen will have to be discharged; fire companies will have to be reduced; teachers' salaries will have to be cut; some of the library sub-stations will have to be abandoned; when bridges and viaducts go to pieces they will have to be closed, as we will have no money to repair them; our streets will be dirtier than they have ever been, our alleys will be uncleaned;

we shall not be able to dispose of garbage; health inspectors will have to be laid off."

Hardly a satisfactory state of affairs there! And a glance at a few recent events in New York (among whose sixty City Fathers are thirteen liquor dealers, one Bowery music-hall proprietor, one speculator, eight so-called "real-estate dealers" and two members with no known occupation) is not particularly reassuring.

THE BROOKLYN BRIDGE SCARE

A FEW weeks ago a tremendous sensation was caused by the discovery that a dozen bands and rods on the Brooklyn Bridge had been broken for days, though the official inspectors had failed to report any such evidence of over-strain. Cars were stopped, and for nearly two days thousands of people were put to great inconvenience by reason of an accident which experts said could have been mended in a couple of hours. But by far the most serious aspect of this occurrence was the appearance of official neglect. When the police at the first alarm closed the bridge to the cars, nearly everybody responsible for the care of the structure seemed to be out of town; the only engineer in sight contented himself with railing at the police and asserting that nothing was the matter, nothing at all—and what there was was merely due to heat, or vibration or some other agency removed from human control. Engineers who helped to design the bridge say it was never intended to bear anything like the strain which has been by degrees put upon it; and the public evidently has not the least confidence that anyone in authority will in the future guard against such accidents or infinitely worse.

INCREASED LOSSES BY FIRE

IT is stated that the losses by fire in Manhattan and the Bronx during the last three years were $17,835,000 as against $10,197,000 for the three years preceding. Widely varying explanations are given; but is it not suggestive that the Grand Jury has indicted the Fire Commissioner and a friend who has been making an enormous income by using his "influence" in favor of certain manufacturers of fire-department supplies? While the chief himself is as efficient a fire-fighter as the city has ever had, the department as a whole suffers from this same blighting cause; and it is declared
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General's recent ruling aims to cut off from this privilege all the paper books (which as periodical "Libraries" have hitherto come under this heading), the "fake" periodicals which have existed solely to dispose of something besides the magazines themselves, and the "returns," or unsold copies sent back by the retail newsdealers.

The following statement of the intent of the measure and the manner in which it will be interpreted has been very kindly furnished us by Mr. Charles Emory Smith, the Postmaster General, in response to an inquiry:

"The clubbing of magazines in reasonable combination at reasonable figures which do not defeat the intent of the law is not prohibited. Neither is a combination with a book under like circumstances forbidden. The intent of the law is plain. It is that the periodical shall be of a character which will command subscribers on its own account, and not because of outside inducements it may offer. This does not preclude the use of aids which may operate as a discount, but it does preclude the use of means which become the decisive factor rather than the character of the publication itself. The law intended to give the benefit of the pound rate to publications which the people sought for their own sake, but it did not intend to give that benefit to publishers who practically circulate their periodical for little or nothing in order to get a big list to appeal to advertisers. In other words, the law is designed for the benefit of the reader and not of the publisher. As to the question of definition, it is the business of the Department to administer and not to define. It will deal with each case as it presents itself. What would be a 'nominal rate' in one case might not be in another. It depends upon the conditions and circumstances. The subscription price, the offers, the actual results, the proportion of legitimate subscribers —these and other elements are to be considered. The Department will seek to apply the rules of common sense and fairness without assuming to dictate how any publisher shall conduct his business, and at the same time without tolerating the evasions and subterfuges which are resorted to in order to circumvent the law and which have brought such enormous abuses. I have full faith that fair intelligence and honest purpose will easily distinguish between legitimate and illegitimate publications, and restrict the latter without injuring the former. And the value of such a reform is inestimable."

On such a fair-minded and just basis as this the Department may reasonably expect the coöperation of all reputable publishers, even of those who may be inconvenienced by the new rulings.

THE NEED OF MORE POSTAL FACILITIES

ONE of the greatest arguments for this change has been the large deficit which the postal authorities have always had to face on this class of business. It never came anywhere near paying what it cost and has seriously hampered the whole financial administration of the post-office. Now that a part of this annual loss is to be gradually wiped out, there have been many suggestions that the saving might be utilized to give us one cent postage. This is not only premature but ill-advised: there is far more need of perfecting the present service than of such a reduction; indeed it would probably work actual harm, for it would increase the mails so much that the facilities would be more than ever inadequate.

The condition in New York City has been particularly unsatisfactory, delays in all classes of mail having been so frequent that the Merchants' Association made the matter the subject of several special inquiries. Postmaster Van Cott says that his force has hitherto been inadequate for the vast amount of business transacted; but the corps of clerks was largely increased on July 1st and an increase of carriers is promised for this fall; so he is in hopes of being able to put the service into better shape. The sufferings of the horses during the terrific heat of July and the serious delays thus caused emphasized the loss sustained by the discontinuance of the pneumatic tube service, for which Congress failed to make an appropriation. For four years it had proved its value in making possible early deliveries and late collections for outgoing trains and boats. It is probable that petitions for its restoration will be presented to Congress from both New York and Philadelphia. The eight hour day seems to be responsible for some of the Department's difficulties. Carriers will stop in the middle of a collection or delivery route and return if their eight hour limit happens to arrive then; and though of course another carrier completes the trip, some hours are often lost.

It must be admitted that at its best our system cannot be compared to that of London in efficiency. That city has hourly collections and deliveries, the average number of deliveries in all large English cities being fourteen a day. One can send a letter in the morning addressed to any place within one hundred miles of the Bank of England and, with promptness at the other end, receive an answer the same day. Within the city limits the mail is as rapid as our telegraph. Ladies do their marketing by post, mailing orders between eight and nine and receiving the goods "before noon!" The parcels post is so cheap and prompt that most small packages are delivered in this way instead of by business delivery wagons, and one can send practically anything. It is difficult to see why America should not require and receive just as good a system.

A NEW ERA IN THE PHILIPPINES AND IN PORTO RICO

TO the broad-minded student of public affairs, few things are more interesting than the very rapid and gratifying work that is going on in the Philippines and in Porto Rico. This number of THE WORLD'S WORK contains a letter from a trustworthy and well-informed correspondent, who describes in outline the journey of four thousand miles which the Commission made in the spring, organizing civil government in some of the provinces; and it is now making a similar journey to other parts of the archipelago. Our correspondent calls this the best work now in hand anywhere in the world to build up a backward people; and the judgment seems to be well founded. Cailles, the most important insurgent leader since Aguinaldo, was captured, has surrendered, and five hundred insurgents on the island of Samar have just laid down their arms; the whole archipelago is more nearly in a state of peace than it has ever been since Western civilization has known it. On July 4th the President's order placing the whole archipelago under civil rule went into effect, and Judge Taft has been appointed Governor. The merit system of appointment has been even more rigidly observed in the Philippine service than in appointments at home. Even the difficult question of the status of the friars seems to be approaching a solution. In fact, in every important part of the work of building up the people in prepara
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trophy. The Newport races, the New York Yacht Club's course and the Astor Cup races gave no light beyond this—except to eliminate from consideration Mr. Thomas W. Lawson's *Independence*, which caused so much discussion and for which such remarkable claims were made.

The challenger, *Shamrock II*, has also been defeated during the trials, but she is announced to be some minutes faster than *Shamrock I*—which might still leave her in the wake of *Columbia* according to the record of the 1899 races. She sailed from Liverpool on July 26th, in company with the steam yacht *Erin*, and will probably be on this side of the ocean preparing for the contest by the time this number of the magazine appears. It would be rank treason to doubt for an instant that the *America's* cup will remain with us in spite of indefatigable Sir Thomas Lipton. But the Cup Races are still as they have long been the most exciting sporting event of the year, a contest in which every citizen of the United States, however remote from his knowledge and sympathies yachting in general may be, takes a keen personal interest. It is our boat and its sailors against one from overseas, and Anglo-Saxon blood asks no more in order to be stirred to the depths.

This combination of sporting enthusiasm and national pride are fortunately sufficient to itself, for the cup yachts were long ago developed into racing machines whose success or failure has not the least utilitarian significance. It was of course very different in the "clipper" days when the *America* first won the famous cup: but the commercial advantages of the speedy sailing-craft vanished with the appearance of steamers. A victory of the *Constitution* or *Shamrock* will carry not one suggestion to any builder of merchant vessels whether on the Clyde, or the Atlantic seaboard, or the Great Lakes or Puget Sound.

THE FIRST TURBINE STEAMSHIP FOR PASSENGERS

THE new thing that is interesting shipbuilders is the *King Edward VII*, the first passenger steamer to be fitted with the steam-turbine, which seems destined to revolutionize marine transportation. As far back as 1894 the *Turbinia* proved so successful as to fully justify the claims made by Mr. Alfred Parsons, inventor of this new substitute for the piston type of marine engine, which under the demand for enormous horse-power and high speed has been increasing so in size, weight and consumption of steam as to become very unsatisfactory. The speed shown by the *Turbinia* resulted in the building of two torpedo boats, the *Viper* and *Cobra;* and the former electrified the world a year ago by reaching a speed of nearly thirty-seven knots an hour, and thus proving herself the fastest vessel afloat.

This definitely settled the question of the turbine's value in this type of war vessel, but the recently launched *King Edward VII*, marks the first adaptation to commercial uses, and she is therefore of special interest. On her trial trip on the Frith of Clyde this 250-foot boat made an average speed of 20.48 knots; the weight of her motors, condensers, propellers, etc., is 66 tons—about half as much as that of the machinery required to develop equal horse-power in a paddle-wheel steamer; the consumption of coal is believed to be less; the compactness of the machinery gives additional room for freight or passengers; and the machinery runs without noise or vibration. The propellers themselves cause a very slight vibration right astern, but there is an entire absence of the familiar throbbing and pounding which is the last straw to the "poor sailor."

The new boat seems to be a success in every way and her builders are very confident that they have perfected an engine which will soon make the reciprocating engine a thing of the past in marine transportation. Strangely enough no steam turbine vessel has yet been built in America; but a large firm of New York builders has one in process of construction and the development of the idea here will be watched with keen interest. Meanwhile Mr. Charles R. Flint, the New York merchant and promoter, has just built a yacht aptly named the *Arrow* which was ordered with the stipulation that she should make forty knots an hour; and the claim is being made that Lieutenant Graydon, who has long been working to improve the Parsons turbine, has succeeded in perfecting an engine which will raise the record speed to fifty knots! However this may be, these phenomenal vessels have made even the *Deutschland* seem slow and inventors and shipping owners are now talking of four day boats to Queenstown. The Cunard Line has already invited tenders for a twenty-five knot boat to restore their

supremacy in the trans-Atlantic trade. While experts declare that there is not enough oil in sight to make it possible that it shall ever supplant coal as fuel for steamers, there is a picturesque suggestiveness about the assertion of Mr. George Wilson, president of the "Atlantic Shipping Company," who promises a line of turbine vessels (using crude petroleum as fuel and thereby saving $5,000 a trip in fuel alone) to cross the ocean in less than four days. This is almost too good to be true: but the thirty knot ocean liner is looming large on the horizon.

THE BIG SHIP GROWING BIGGER

NOR is it only in the matter of speed that steamship records are being broken. The steamship *Celtic* (of which we publish a detailed description elsewhere in this issue) arrived at New York on her first trip early in August to be welcomed as the largest vessel in the world, her 700 feet of length and 20,000 tons leaving far behind the mark set so long ago by the unlucky *Great Eastern*. With modern methods of construction, and modern harbor and dock facilities, there seems to be an economy in these monstrous ships which will cause the construction of still larger ones. Already a Connecticut shipyard is at work on four 25,000 ton mammoths for Mr. J. J. Hill's Pacific Line, eclipsing even the *Celtic*. A new development directly due to these monster freight carriers is a delivery barge now being tested, by which it is expected that the handling of coal, ore, grain and similar cargoes can be done automatically—at a cost of from one to three cents a ton instead of fifteen to forty, and in probably a tenth of the time now required.

A slight variation of the tendency towards larger and larger ships is resulting up in Maine in the building of the first seven-masted schooner. For certain kinds of trade, carrying lumber and the like, the big schooner is far more remunerative than the steamship, costing far less to run and requiring a much smaller force of men, while carrying almost an equal amount of freight. The two six-masted schooners, which attracted widespread attention last year as the first of their class, have returned a very handsome interest on the investment to their owners, and this is causing a further enlargement of the type. It is an interesting evidence of the almost indefinite extension of steel's uses, that metal is replacing wood
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A similar story comes from Italy, where the *Delfino* is reported to have traversed the whole bay of Spezzia under water and torpedoed the ironclad *Varlse*, though the latter had been warned of the attempt; this boat is said to have an apparatus extending submarine vision and making possible photographing at a distance of one hundred yards. It is no wonder that France has ordered twenty more vessels of this class in addition to the ten already afloat or on the stocks. For these feats introduce an entirely new and most disturbing factor into the chances of war. It has been proved that a cruiser or battleship with a full armament of quick-firing guns has little to fear from the ordinary torpedo-boat, and the contest has hitherto been between the gun-makers and armor makers: as soon as a more powerful rifle or projectile was devised, there was a grand scurrying around until armor-plate could be piled up in sufficient mass and quality to withstand this new attack. But armor and armament are matters of secondary interest if one is to be blown into the air by a foe who comes secretly from the depths of the sea and vanishes again as silently. It is not difficult to foresee that in the next great naval war the submarine boat will play a conspicuous and dramatic part. It is not impossible, morever, that the perfected submarine boat, with its terrible capacity as a life-destroyer, will do more toward effecting an era of peace than calmest Congress and the most deliberate statesmen.

PREPARING AN ARCHIPELAGO FOR CIVILIZATION

THE 4000-MILE JOURNEY OF THE PHILIPPINE COMMISSION, ORGANIZING CIVIL GOVERNMENT IN THE ARCHIPELAGO— THE EDUCATIONAL WORK THAT IS MAKING A REVOLUTION

[This report of the Philippine Commission's journey was written from Manila, after the return of the Commission, by a trustworthy correspondent who accompanied it]

THE Philippine Commission has returned to Manila from a journey that will become historic. A very brief account of it, together with the itinerary, will give a better idea of the condition of the archipelago than can be had in any other way. From March 11th to May 1st its members traveled very nearly five thousand miles, organizing civil government in such provinces as were ready for it, and getting accurate information everywhere. Its report will be, perhaps, the most interesting document of the kind that was ever sent to a home government from a colony. The magnitude of the task that has been undertaken, and the success that now attends the Commission's work, are almost incredible at a distance; *and it is the most important work for civilization that is now done by any agency in any backward part of the globe.* It will reflect eternal credit on American character.

Before this long journey the Commission had already organized civil government in the provinces of Benguet, Pangasinan, Tarlac, Pampanga, Bulacan and Bataan.

The Commissioners sailed from Manila on the transport *Sumner*, and took their families along, each paying, of course, for their maintenance as well as his own. Nearly all the members of the Commission's staff went along, and were kept very busy. During the early part of the trip they had with them Chief-Justice Arellano, Ambrosio Flores, an ex-insurgent Tagalog general; Doctor Tavera, the President of the Federal Party; and Judges Araneta and Llorente, of the Supreme Court, the former a resident of Iloilo, and the latter a resident of Cebú.

They first went to the province of Tayabas and landed at the town of Lucena. This province was in a perfectly normal condition, thanks to the good judgment of Colonel Cornelius Gardiner, of the Thirtieth Volunteer Infantry, to whom the people were devoted.

They had insisted on his being appointed Governor, and this was done. The Commissioners were received by a very large concourse of people, and were escorted from the landing-place to the town by a troop of mounted native police and by leading men on horseback. The usual arches had been erected and the town was very gaily decorated. Flowers were showered on the ladies of the party from second-story windows as they passed through the streets. The procedure which was followed here was typical of that in every province where conditions were such as to justify the establishment of civil government.

As soon as possible after arriving, the Commission held a conference with the military officers to learn their version of the situation. They then called a public session of the Presidents and Councillors of the towns of the province, who had previously assembled in obedience to a telegraphic summons. After listening and replying to the usual address of welcome from some leading native, Judge Taft proceeded to state the object of the visit, and to secure a list of the towns represented; and he then explained in detail the provincial and municipal codes and the character of the special law necessary to make the provincial code applicable, calling particular attention to special points, such as the salaries which ought to be paid to the provincial officials, the bond of the Treasurer, the *per diem* to be allowed government officials while traveling in the performance of their duties (which necessarily varied considerably in different provinces), the advisability or non-advisability of quarterly reunions of the Presidents of the towns of the province, the town where the capital should be located, etc., etc.

The discussion was then thrown open to the public. In some instances the people were only too willing to take part; in others ignorance and inexperience made them backward and it was necessary to call up leading men and interrogate them. The Commission inquired fully into the resources and actual condition of the several provinces. While the session was going on, the Filipino companions of the Commission were quietly circulating about and learning as much as possibe from the native side about the actual situation and about men who would make suitable officials. The people almost invariably asked explanations of points which they had failed to understand in the Mu
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at night, to wake up in a new capital the following morning and go through the same performance there. At some places, however, two days were spent in a place, and, very rarely, three.

The Commission decided to transfer the provincial capital from the town of Tayabas to Lucena, on account of the unhealthfulness of the former place; but the inhabitants of Tayabas had spent some 5,000 pesos in making preparations for the visit, and the Commission went there. Thirty-five large bamboo arches had been erected in Tayabas, and everything else was on the same general plan. The usual lunch, banquet and dance followed.

When the Commissioners reached Marinduque they found the people desirous of an independent government, but the island was in an unsatisfactory state with a considerable insurgent force still in the mountains. They were told that civil government must be postponed until conditions improved. When the Commission stopped there on its return, the insurgent officers who had been giving trouble sat in the front row at the public session. It was believed that all guns had been turned in and tranquility was completely restored. Civil government was then organized.

Negros presented a peculiar problem: the people put themselves entirely and unconditionally in our hands at the outset. As a reward General Otis gave them a degree of independence which they never sought. Under his order there was established a little independent state which had a legislature to make its own law. It was doubtful whether the general laws passed by the Commission applied to them until this state of affairs should be changed. Negros had an independent educational system and an independent judicial system. Its government was exploiting the public forests and was dabbling in the matter of disposing of the public lands. Finally, the system was sufficiently complicated to have served very well for the archipelago as a whole. During the past year they had raised some 202,000 pesos by taxation, of which only 10,000 had been spent in public works, nearly all the remainder going into salaries and traveling expenses of public officials. Eastern Negros, which had contributed approximately one-third of this amount, had received back but 700 pesos for expenditure on public works. The municipalities were running under a law of their own, and the difficulties resulting from all this were endless. It was evident the time had come to make a change, but the people of the island had been loyal from the outset.

But the best men of the island had become convinced that the government they had was a very top-heavy and enormously expensive affair, and they asked for the same system as other provinces.

At Jolo the visitors received a very striking welcome at the hands of the Moro and Chinese citizens, who succeeded in getting up one of the most unique water-spectacles it was ever my fortune to witness. The Moros in their gay clothes, with their boats trimmed with American flags, some of which carried bands of music and dancers, presented a very striking appearance, while the Chinese sculled around in their boats and let off innumerable firecrackers, thereby adding their share to the general uproar. After this demonstration was over, the Sultan and the leading datos came to the steamer for a conference. An unarmed American, it is said, can go all over the island of Jolo, and Siassi and Tawi Tawi are also safe.

All around the island of Mindanao, the military garrisons have been most healthful. At places not a man has died or been killed for a year, and the sick list has contained only one or two names at a time. This is true also throughout the Visayas. It seems to be a fact that the majority of these posts have been demonstrated by experience to be far more healthful than many of the camps or army posts at home.

In Mindanao, General Kobbé and his men have secured the release of all Filipinos formerly held by the Moros as slaves, and are pretty effectively preventing the taking of any additional slaves. It is only fair to state that the slaves are usually indistinguishable from other members of a Moro household, and if every slave were freed, it is probable that ninety-five per cent. of them would voluntarily go back to their masters.

Major John E. McMahon, of the Twenty-eighth Infantry, in command at Cottabato, one of the great centres of the Mohammedan population of Mindanao, has shown rare tact and good judgment in dealing with the Moros. Every chief of any importance within a hundred miles came to welcome the Commission, and an old Spaniard, who had lived in Cottabato since the day the Spaniards took it forty-two years since, declared that the town

had never before seen such a gathering of Moros. The most powerful of all the chiefs in Mindanao is Dato Piang. He is not a Moro at all, but a Chinese half-caste. With the Chinese love for trade he has improved the opportunity given him by the protection of the Americans, and the result is that he has become our devoted friend. As he, with some fifteen thousand fighting men, controls the lower end of the river, which is the outlet for the whole great lake region, the other datos have to be good. They are as proud as Pompey and jealous of their prerogatives, but are rather glad to have an American to whom they can refer their endless disputes for impartial decision, thus avoiding the humiliation of yielding to each other. The result of McMahon's work has been to restore peace throughout this whole region, and to make it so safe that recently an American went unaccompanied one hundred and fifty miles up the river and lake system.

The Commission traveled very nearly four thousand miles, and made twenty-eight stops at twenty-six provincial capitals, organized seventeen provincial governments, and gathered the necessary information for settling the status of Mindanao and the Jolo group. They passed appropriation bills and a number of laws of minor importance while traveling from place to place. All the unorganized provinces of Luzon are now ready for organization, and a journey will be made to them to complete the work. This is, of course, only the beginning. As provinces and municipalities are organized, endless questions occur to the newly appointed or elected officials.

As a result of this opportunity to get a fairly conclusive view of the whole situation, the Commissioners consider it most satisfactory and full of promise of further improvement in the near future. In the few places where trouble still exists—and they are very few—it is generally traceable to the character of the military commander. Over against such unfortunate instances of civil incompetency must be put the striking cases of efficiency displayed by men like Scott, in Antique province; Captain David Shanks, of the Eighteenth Infantry, in Capiz; Colonel Pettit, in Zamboanga; Captain Kelly, in Dapitan; Colonel Murray and Major Allen in Leyte; and Colonel Howe in Sorsogon.

The eagerness displayed for educational facilities in the provinces is as promising as it is pathetic. It is a pity that a man like Sixto Lopez should misrepresent in America the educational situation in these islands. Superintendent Atkinson accompanied the Commission on its trip, and will do all he can to bring about a change. The best thing that has been done in an educational way since our advent in the Philippines has been the opening of a sort of summer normal school for native teachers. This idea was carried out by Dr. Barrows, the Superintendent of Manila Schools, who is an admirable man for the place. He speaks Spanish well, knows just how to manage the people, is thoroughly qualified, and is a courteous man. He has worked himself nearly to death over this school, and has brought together more than six hundred native teachers, representing, it is said, twenty odd provinces. He has aroused great enthusiasm among them, and they will go home and tell their people of their experiences.

The improvement in conditions in the Philippines within the past three months has been almost beyond belief. If a radical change did not begin as soon as the Commission expected, it progressed, when it did begin, much more rapidly than could have been anticipated.

The surrender of prominent insurgent leaders was expected soon after the presidential election and the plan of the Commission was to push the work of organizing the municipalities and thus get the people, province by province, ready for civil provincial government. The plan has worked out more rapidly and favorably than could have been anticipated. The Federal Party spread like fire in prairie grass. Three of the best men in the islands —Chief-Justice Arellano, Dr. Pardo de Tavera and Judge Florentino Torres (at present Attorney-General)—form part of its "Directorate" of seven men. Local committees were organized as speedily as possible in the more important provinces and towns and the work of the party extended rapidly. Mistakes were made. Occasionally insurgent sympathizers got into office in order to aid their cause by trying to do harm. In spite, however, of all obstacles and of other minor mistakes, the party has accomplished wonders. The majority of the influential and respectable people of these islands were with us, and all that was needed was something to crystallize the pro-American sentiment. The Federal Party has fulfilled this end.

BUILDING AN AMERICAN BRIDGE IN BURMA

HOW AN AMERICAN COMPANY SECURED THE CONTRACT FOR THE GOKTEIK VIADUCT ON THE ENGLISH RAILWAY, EIGHTY MILES FROM MANDALAY, IN BURMA—THE LARGEST VIADUCT IN THE WORLD DESIGNED IN AMERICA, MADE IN SECTIONS, SHIPPED HALF WAY ROUND THE WORLD, AND ERECTED SUCCESSFULLY IN THE ESTIMATED TIME—EXPERIENCES OF THE ENGINEER AND AMERICAN WORKMEN WHO ACCOMPLISHED THE FEAT—BRIDGE BUILDING WITH THE THERMOMETER AT ONE HUNDRED AND TWENTY DEGREES—THE GIANT "TRAVELER," TOOLS AND PLANT FINALLY SOLD TO LOCAL FIRMS

BY

J. C. TURK

ENGINEER IN CHARGE OF CONSTRUCTION

Illustrated from photographs taken by the author

Above Chungzoune Creek, which flows through the Gokteik Gorge in Upper Burma, has towered since last December the only American bridge in the Indian Empire and the greatest railway viaduct in the world. Ten years ago an American bridge in India would have seemed an impossibility; today the globe-trotter can stand on the rocks at the bottom of the Gokteik Gorge and see the Mandalay-Kunlon train shoot by eight hundred and twenty feet above him, drawn by an American locomotive across an American bridge. From the creek itself, eighty miles northeast of Mandalay, rises a remarkable natural bridge of foliage-curtained limestone, five hundred feet sheer up from the stream; and upon this freak of nature stands the three hundred and twenty feet of steel trestlework that forms the Gokteik viaduct—2,260 feet long, and about as high as the towers of the new Brooklyn Bridge.

Only Mr. Kipling could do justice to the story of this bridge—indeed, he has already told the tale in part in more than one romance. It is an intensely dramatic bit of modern business enterprise, typical to the last degree of the true American "expansion." Into the office of the Pennsylvania Steel Company at the little town of Steelton, Pa., come specifications and general plans for this viaduct on the other side of the world—which have also been submitted for bids to representative English bridge-builders. It is to be the largest structure of the sort ever put up; in a country where monsoons and floods are to be reckoned with, and where the maddening labor problem is not to be solved till one arrives on the ground; the whole colossal mass of steel trestlework must be shipped half way round the globe, and then each part must fit every other one and the local conditions as well.

But the men who had replaced the old suspension bridge at Niagara without stopping a train did not balk at this ugly combination. Over the ocean went their estimate—the detailed plan being prepared by their designer, Mr. Reynders. The former proved to be so far below that of all their English competitors, both in price and time, and the design was so much superior to anything else submitted, that the contract was promptly awarded them, much to the chagrin of their rivals, whose patriotism rallied vociferously around the flag at this stab through the pocket.

The men in Pennsylvania paid little heed. They were busy. Presently the vast and complicated framework of steel trusses and beams was a reality instead of a plan on paper; and Mr. J. C. Turk, their engineer, was speeding over-seas to superintend the placing of these innumerable parts in position. Here is his own account:

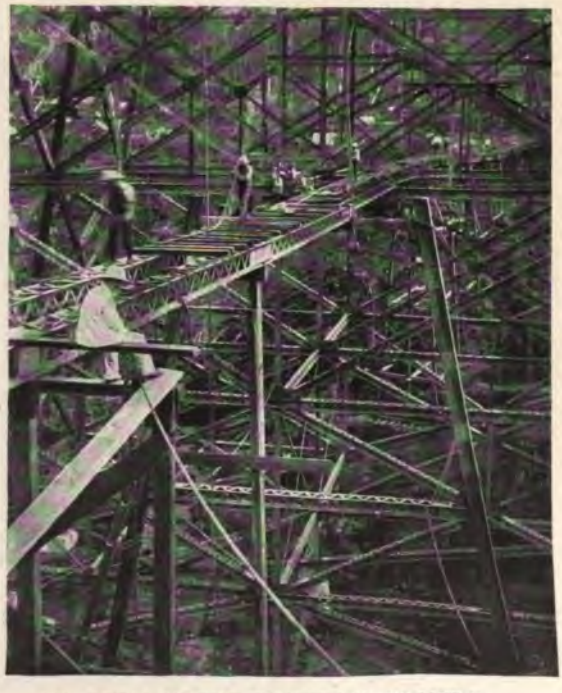
THE Gokteik viaduct has been standing now nearly a year, and other work has intervened, but the details of my Burmese experiences stand out so vividly from a background of more commonplace engineering that I count it unusual good fortune to have been selected to take charge of the undertaking. Engaged on work in New York at the time the Pennsylvania Steel Company closed its contract with the Burma Railways to construct a single track viaduct designed by Sir Alexander Rendle & Co., across the Gokteik Gorge, I was summoned to Steelton and told to prepare to leave at once for Farther India. Instructions were given me to represent the company in all dealings abroad—and to see that the viaduct went up on time. I prepared accordingly to set out.

Leaving New York in July, 1899, my wife and I proceeded to London, met there Mr. A. T. Goodfellow, the general manager of the Burma Railways, and sailed with him on the Bibby Line from Marseilles for Rangoon. Down the Mediterranean to Port Said, with its yelling Arab coalers and polyglot street urchins, through the oven-like Red Sea to Aden we steamed—across to Colombo in Ceylon, four days up the Bay of Bengal in the teeth of the monsoon, and then through ninety miles of tropical heat and hungry

"ON THE ROAD TO MANDALAY"
The luxurious private car in which Mr. and Mrs. Turk traveled

mosquitoes up the Rangoon River to the city. Here I enjoyed several days of Mr. Goodfellow's delightful Anglo-Indian hospitality. Then with Mr. Deuchars, chief engineer of the Mandalay-Kunlon, I left Rangoon on the Governor's special train for Maymyo, forty miles northeast of Mandalay and forty miles from the Goketik Gorge.

TEMPORARY TRESTLE UNDER THE HIGHEST TOWER
Showing detail of the tower structure



MR. GROSS ON THE TEMPORARY TRESTLE
Workmen laying track for the construction cars

THE CAMP OF THE NATIVE LABORERS

Going up to Maymyo (only ten years ago a hornet's nest of *dacoits*, but now a thriving village, half European and half Burmese, soon to be the headquarters of the army of British Burma), we criss-crossed up the precipice on the east side of the Irrawaddy at a grade of

THE INCOMING AND THE OUTGOING

The Baldwin Locomotive and the Buddha

THE WORKMEN'S CAMP

MR. TURK'S BUNGALOW

one foot in twenty-five. In some places it was too steep for curves; switchback reversing stations came every other mile. First we climbed a mile forward; then we switched and climbed another backward — and so slowly upward. But the scenery was marvelous. Tumbled masses of purple teak-covered hills rolled away to the horizon, and the valleys were rocky canyons often a half mile deep, with icy streams at the bottom from slim white cataracts that poured down the canyon walls. At one point the train crawled along the face of the rock with a sheer drop away of fifteen hundred feet from the outside of the shelf. All the way up to

COMPLETING THE TRAVELER

Riveters at work

THE INSTALLATION OF THE TRAVELER
Wondering natives in the foreground

the plain in the Shan Hills where Maymyo lies, these spurs of the Himalayas outdid the Sierras in picturesqueness. On the plain itself, and indeed throughout the Shan States, though it has belonged to the Indian Empire for only fifteen years, the country has already been reduced to systematic order; the former soldiers of Thibaw, the last of the Burmese kings, are now building better roads than I have ever seen in my native State in New England, and the reformed *dacoit*, as he cultivates his rice field and patches up his irrigation ditches, can see the steam road-roller lumbering through jungle that he shared not long ago with elephants and tigers. The whole province, about as large as France, is the most prosperous in India.

NOON—COMING IN TO TIFFIN

From Maymyo Mr. Deuchars and I on a trolley, or inspection, car covered the distance to the rail-head of the new road, twelve miles from the Gorge, propelled by two pairs of chunky, bare-legged Ouriah "*trolley-wallahs*." It is the rule in India for the natives to do the work while the white man does the thinking; but this method of travel, in which the white man sat on the hand-car and the natives ran behind and pushed, was certainly the apotheosis of the system. On our particular trip, however, as the route was all down hill the "*trolley-wallahs*" rode—cheerfully dangling their legs from the back of the car—until we reached the rail-head, where we found Burmese ponies and about twenty coolies waiting to transport us over the remaining twelve miles.

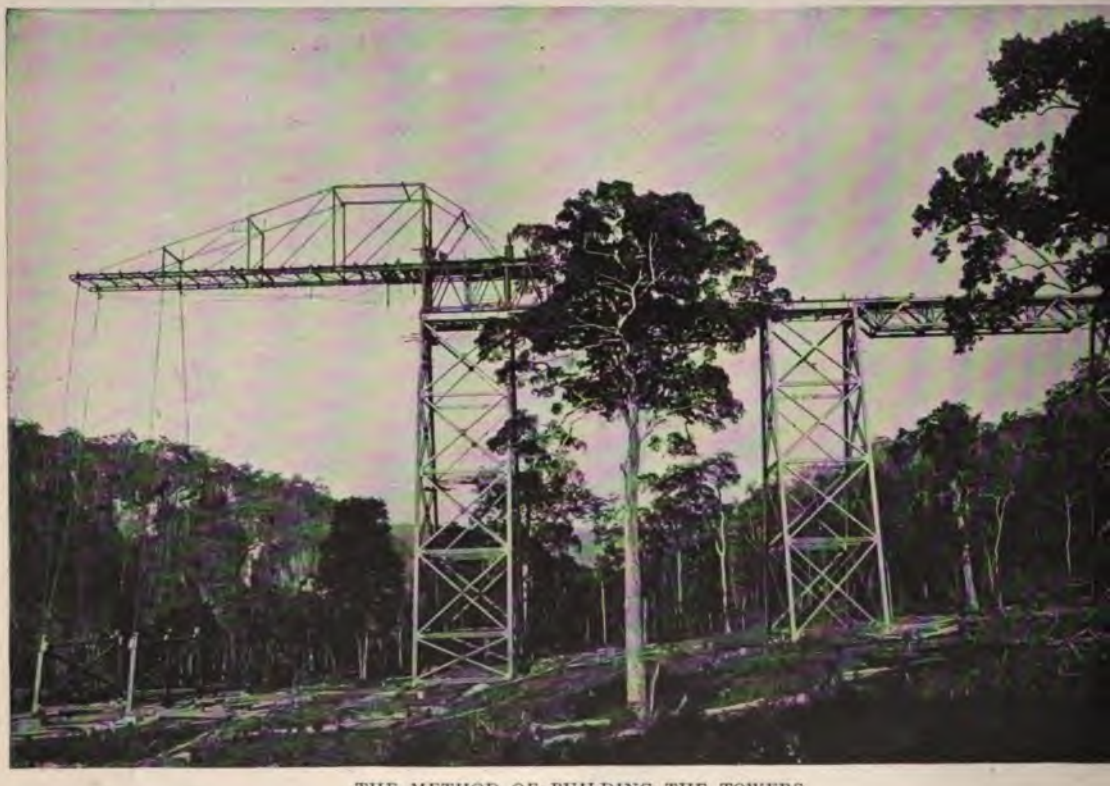
As is usual in India, we each carried a kit. Even when visiting friends one must bring one's own bedding and mosquito netting; out here in the jungle we had also "tiffin baskets"

with knives, forks and dishes, a large case of tinned stores, pots and other camping requisites; and we needed, therefore, a small army of coolies besides our own servants to carry the baggage. When all the various packages had been slung on poles to be borne on the shoulders of the coolies, we started on our short ride through the teak forests and jungle-brush. To the Anglo-Indian, twelve miles, or twelve hundred miles, on a pony would have been a matter of course, but to a New Yorker, who, though accustomed to clinging to straps on the Sixth Avenue Elevated and fighting for a car at the rush hour at Brooklyn Bridge, had never been on a horse's back outside of a juvenile riding academy, anticipations of the ride were not over pleasant, especially when I thought of the tales I had heard of the Indian jungles. For the first few miles I clung fiercely to the pony and looked for tigers in every clump of bamboo, for cobras and hamadryads in every swinging branch; I expected centipedes and scorpions to drop from the palm trees; and every Burman with his "*dah*" or Goorkha with his "*kookerie*" I took in my inexperience for a *dacoit* in disguise. In reality, however, the trip was as peaceful as a ride of equal length in New England; the sure-footed Burmese ponies, as diminutive as the burros of the Rockies, picked their way along the bridle paths, sometimes out on the face of the cliff a thousand feet above the bottom of the valley, with such wonderful sagacity, and the wild beasts—if there were any—kept such a respectful distance, that with the exception of an accident to one ambitious pony (mine), nothing of moment occurred. The pony's mishap was due to a misguided effort on his part to cross a stream on a culvert that would

have been a fair performing place for a tight-rope dancer. I had just time to tumble from the saddle when the pony went over, slapped into the mud on the edge of the creek with his back down and his legs threshing the air like an overturned beetle's, and was hauled out with his pride broken and his reputation gone. The rest of the way I rode another pony. As we drew near the Gorge the native laborers formed in long lines along the road and salaamed as we passed. Later I became used to such performances, but at first it gave me a shock of surprise, each time we approached a road-gang of half Ouriahs, Pathans and Goorkhas to see them drop their picks and shovels, scramble down to the side of the road, and salaam in long, perspiring lines.

BITS OF A DAY'S WORK

Upon passing the last of these gangs we arrived at the Gorge, where I was at once impressed with the stupendous natural bridge under which the Chungzoune runs, and with the engineering skill of Mr. Deuchars, who formed the plan of taking advantage of this formation and running the viaduct on its crest. By building across the natural bridge a viaduct three hundred and twenty feet high, it was possible for the railway to reach a natural shelf on the face of the cliff, up which it could climb on a steep grade to the top of the plateau some miles away, there to turn sharply to the northeast for the Kunlon Ferry.



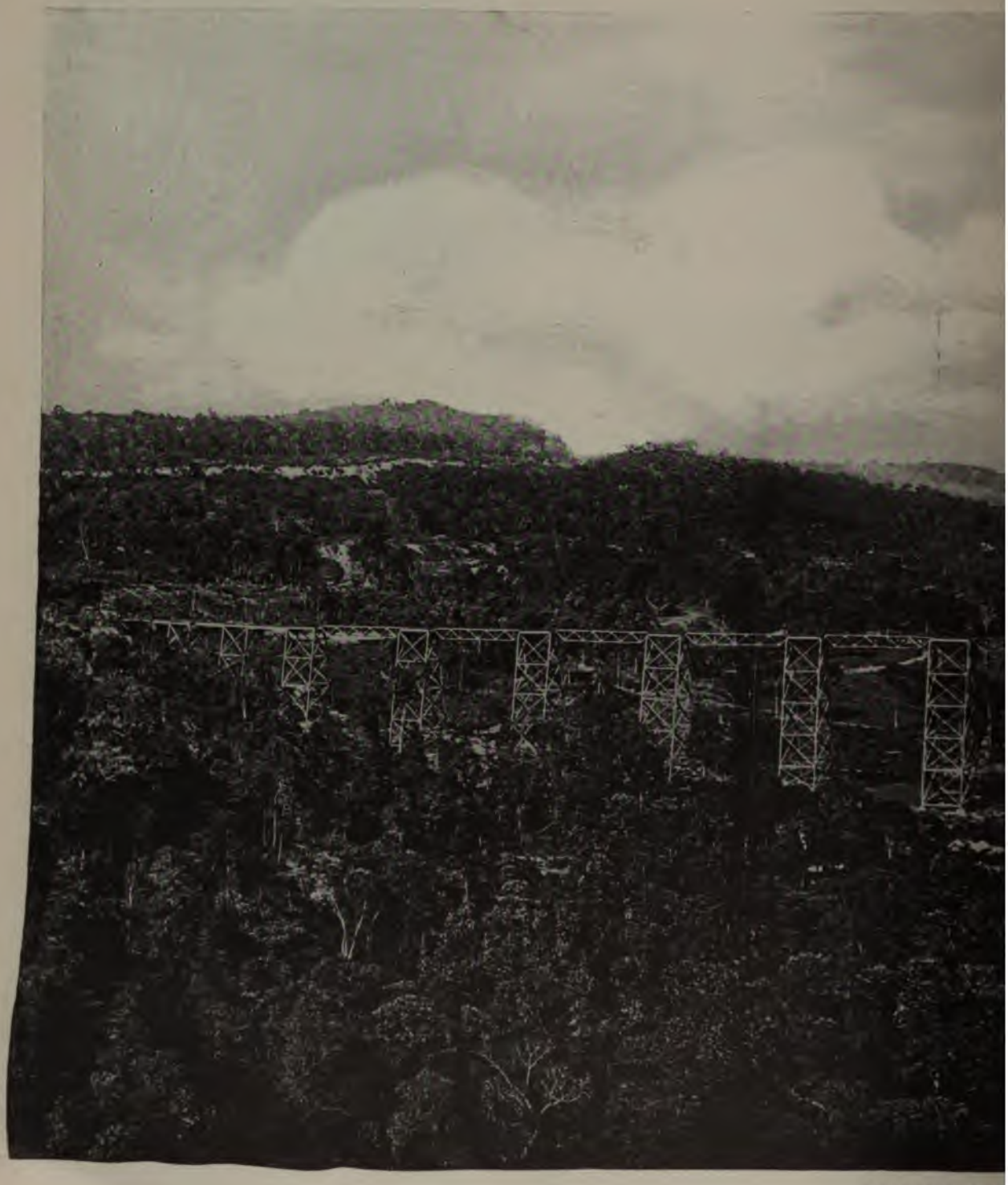
THE METHOD OF BUILDING THE TOWERS

Already, when I reached the Gorge, the concrete piers for the trestle-work had been built—the piers were not in our contract—and stretched in two apparently converging lines across the valley. Everything, in short, was ready; nothing remained but to secure workmen, ship our material up from Rangoon—where it was arriving from New York by the American-Indian line—and begin operations.

The first work to be done was the hiring of laborers. But just as I was on the point of starting back to glean the labor markets, received a visit, before we could leave can from the first of the army of visitors w flowed up from Mandalay later to inspect t construction of the viaduct. The first cal was the *Sawbwa* of Thibaw, the prince the little Shan State where the Gorge situated, jogging along in his oil-cloth cover bamboo *palki*, borne by four of his stoc subjects, to pay his respects to Governor S Frederick Freyer at Maymyo. With sua Oriental courtesy he wished us success; b afterwards, when the viaduct had been co pleted his brother, the *Myook*, or Mayor, Nawnghkio, the nearest town, told me th they had never believed their great gor could be bridged, and even then wished inquire if the structure would long "tie t Shan Hills together." Despite his distrust western engineering, however, the Prince is very able man, whose opinions are treated wi much respect by the Government of Burm and the *Myook*, while the bridge was going u was very friendly, went shopping with m wife and me in the Nawnghkio bazaar wh

THE LARGEST TRAVELING CRANE IN THE WORLD

The Viaduct nearly completed : The traveler overhanging the north slope of the valley



LOOKING ACR

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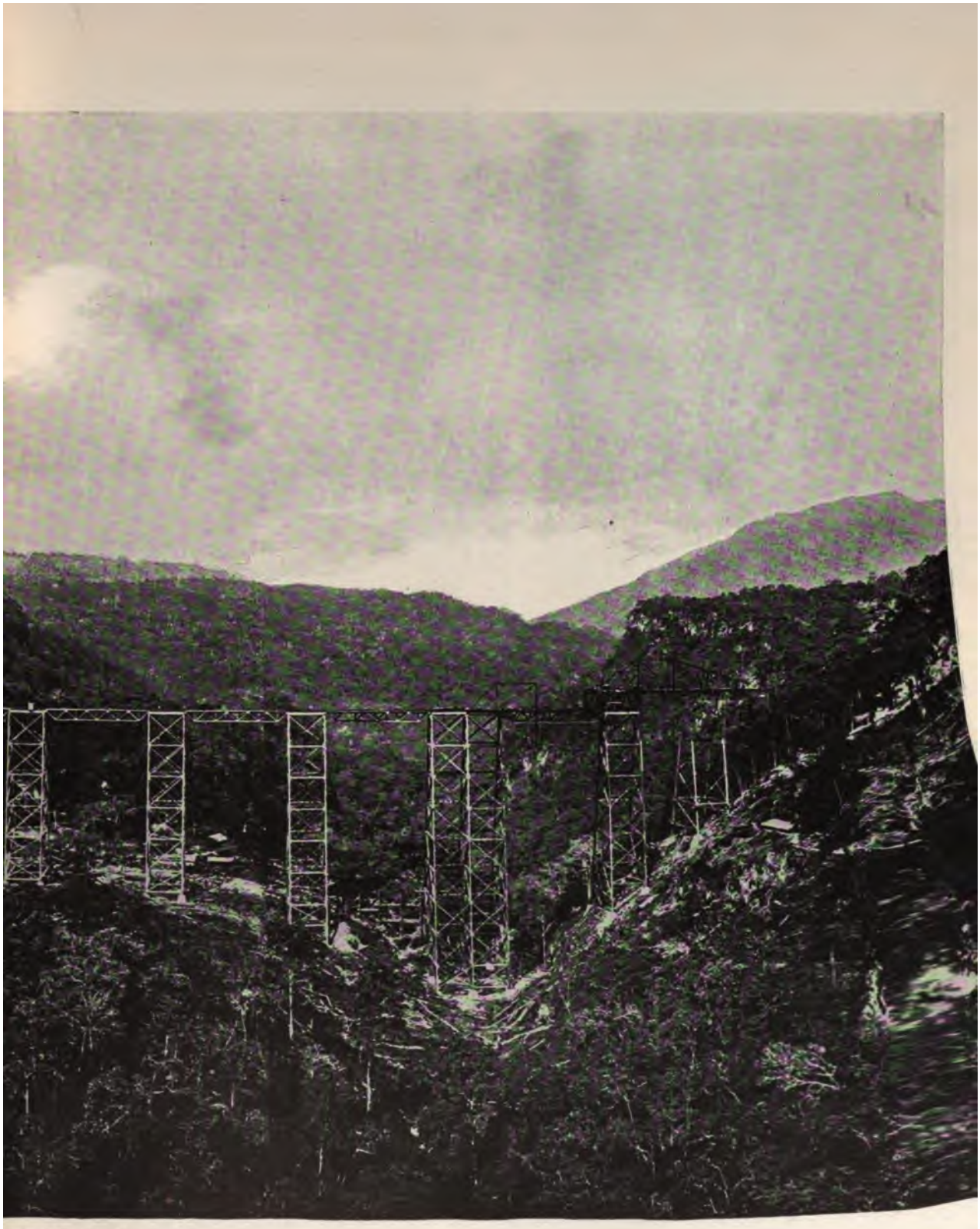
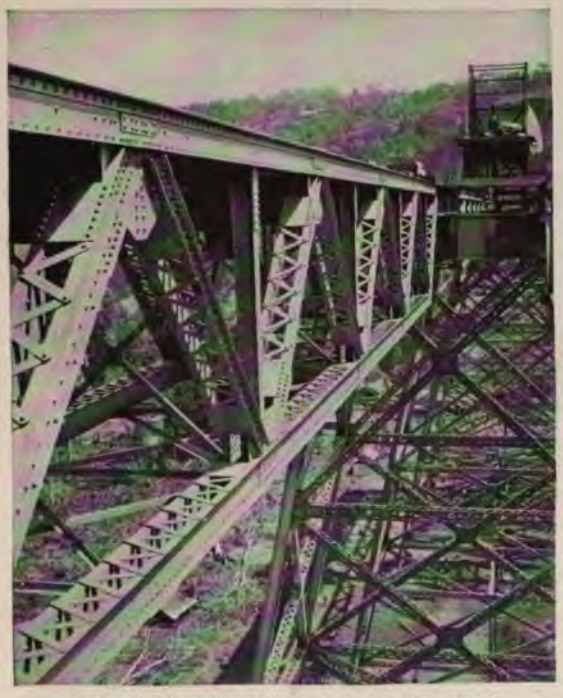


O THE HILLS

k viaduct



SHOWING TRUSS-WORK ON A LONG SPAN

we wished to buy native curiosities or odd bric-à-brac from Chinese caravans, and had a way of dropping a word to shopkeepers with a marvelous effect in making prices tumble.

INSIDE THE TRAVELER

As soon as the *Sawbwa* had swung away in his *palki*, I started off on my hunt for labor—first to Mandalay, then back to Rangoon, and finally, after four days of steady pitching and tossing on the Bay of Bengal, up the dangerous Hooghli, with its treacherous current and shifting shoals, to Calcutta. In all of these places the method of securing laborers was the same: upon the advice of English engineers I had met, I sent for native *mistris*, or foremen, and had them bring their gangs to me one at a time—from these I made selections. At Mandalay and at Rangoon I managed to pick up about ten sets

THE THREE HUNDRED AND TWENTY FOOT TOWER

Showing the beginning of the temporary trestle on which material was carried

of native riveters, mostly Sikhs and Punjaubis, and a small gang of Punjaubi coolies; and in Calcutta, that city of unbearable heat and innumerable smells, I secured a small army of *khallassies*, or riggers, and a gang of Gujerati lascars from the Bombay side—enough to start with. At Rangoon again, on my return, I met Mr. Louis N. Gross with twenty American workmen from Steelton. Mr. Gross, who had been foreman of con-

AMERICAN WORKMEN ON TOP OF A TOWER

struction on the great Southern terminal in Boston, the new Niagara arch, and other great contracts of the Steel Company, was to superintend the actual putting together of the viaduct; and the men, all of whom had worked at Steelton, reinforced by ten others who came out later, were to do the work. Not only was the plan of the bridge made in America, and every girder, and brace, and bolt manufactured here, marked for a definite position, and shipped directly from New York, but every bit of steel in the structure was put into place by some one of the thirty skilled workmen from Pennsylvania; the natives simply shifted material, riveted and painted.

This American invasion of Thibaw was signalized by a downpour of rain, tropic rain, that for steadiness and volume was phenomenal, the streams became torrents, the swamps became lakes, all work was stopped, the Mandalay-Kunlon was washed away in thirteen places, and all of Upper Burma sat down and waited for it to stop. In one place, as the road washed out, one of the new Baldwin locomotives, sent down the line in a brief lull, sank into the water-soaked embankment, and to the disgust of a Burmese farmer, slid into the adjoining rice-field. To add to the confusion of the railway, our first shipload of tools, material, and erecting plant—which they had contracted to deliver to us at the Gorge—arrived at Rangoon while the last twelve miles of their track were unfinished, and while they were waiting for the rain to stop in order to attack the thirteen washouts. I was at this time in Maymyo, cut off from the men, who had reached the Gorge; and the men were cut off from their base of supplies. They had arrived at camp with a full complement of native servants and all sorts of furniture and utensils, but with

ANOTHER VIEW OF SAME TOWER

INSIDE THE TRAVELER

eatables enough for only two weeks. At the end of the two weeks it was still raining so hard that bullock teams could not get through, and if it had not been for some onions and rice they were able to obtain, and a little game they managed to shoot with the armory they had brought with them, they would have suffered considerable hardship. Indeed, as it was, they welcomed the bullock carts, when they wallowed in at last through the mud, with the most cordial greetings—and afterwards they were fond of maintaining they had lived their first six weeks in India on half rations of rice and kerosene.

Finally, however, we were able to begin work on the viaduct the first of February, 1900.

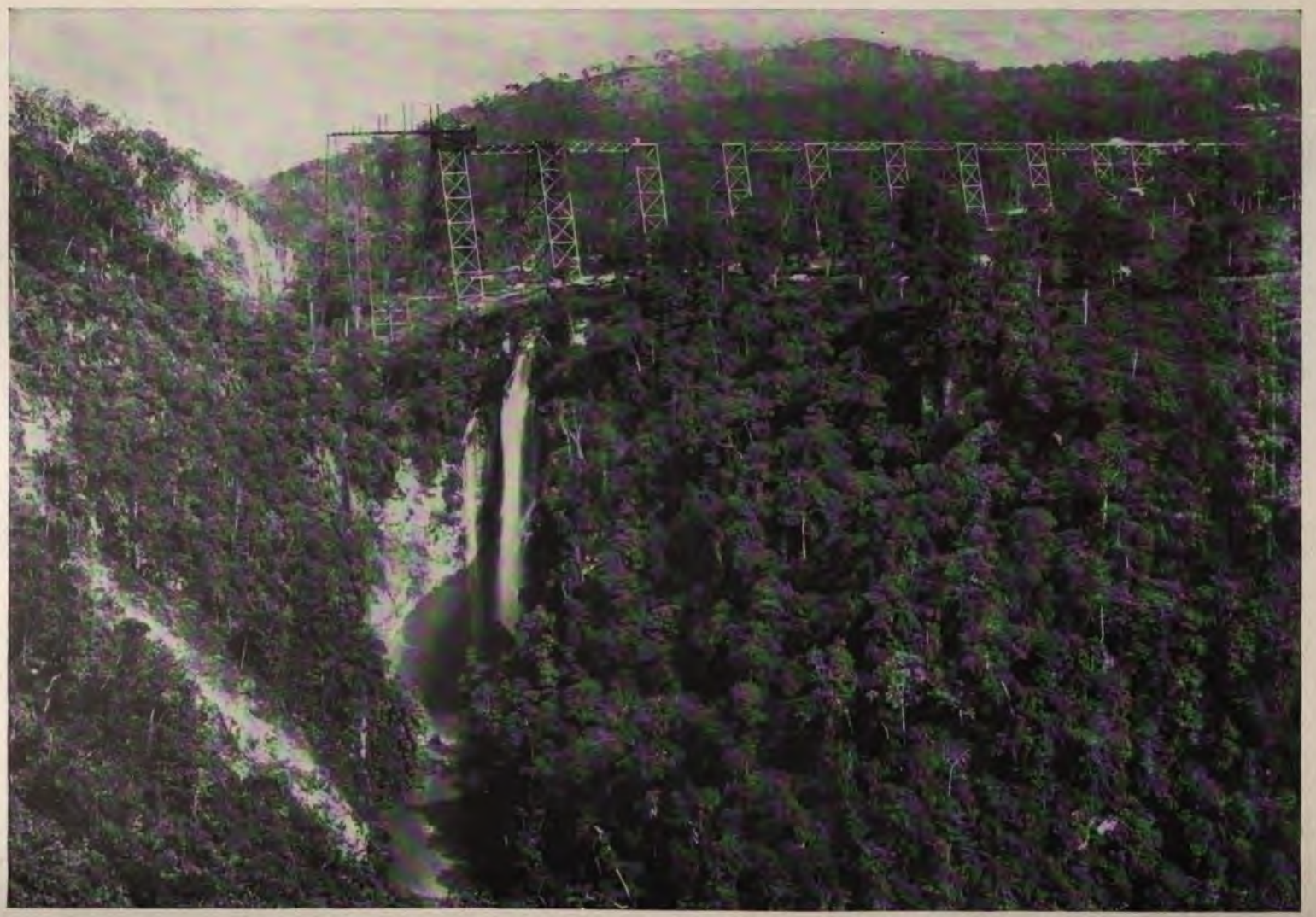
THE BASE OF A TOWER

A MAIN TRUSS OR CROSS-GIRDER

Any great engineering project carried on fifteen thousand miles from home is bound to be full of difficulties, since all kinds of unforeseen accidents are likely to occur. At Gokteik we had no sooner emerged from the rains than we were confronted with the problem of handling, sorting and storing our material at the starting point of the viaduct in a cramped, inconvenient spot on the steep slope of a hill. In America a few carloads of material can be shipped as they are needed, but out there a second steamer load—comprising a full third of our material—was upon us before the first load had been properly

WHERE THE TRESTLE-WORK CROSSES THE NATURAL BRIDGE

Looking up 820 feet to the traveling crane poised on the big twin tower



EIGHT HUNDRED AND TWENTY FEET ABOVE THE CHUNGZOUNE

Giving an idea of the wild beauty of the country through which the bridge was constructed. The cataract in the foreground falls in the rainy season only

RUNNING OUT A CROSS-GIRDER

stored, and just as we were establishing our plant and beginning actual work in the field. The confusion was indescribable. The storage yard at the bridge head became a scene of the maddest activity. As the material came in from Mandalay, our big steam derricks whipped it out of the little, metre-guage freight cars, and swung it over to the smaller derricks for final disposition; and coolies swarmed about with smaller pieces like ants in a stirred-up ant-hill. The work went on with such speed that the native engine drivers and train hands could not shift empties in time to keep clear of the rush. So when too many of them accumulated, we picked them up with the fifteen-ton steam derrick, and set them down on the bank—where the drivers of the switching locomotives would discover them, fifty feet below the level of the track, piled up like empty drygoods boxes.

THE OVERHEAD GEAR OF THE TRAVELER

At last order came out of the confusion, and work on the bridge began. It is a native custom in Burma, by the way, when any important structure is built to kill several men and place their bodies beneath the foundations to ward off all evil fate, and when I informed the Burmese that no human sacrifices would be made, there was keen disappointment.

In erecting a high viaduct, or even in building a tall city "sky scraper," the difficulty increases roughly as the square of the height, a fact recognized by Mr. J. V. W. Reynders, who drew the detail de-

THE ENGINE ON THE TRAVELER

Showing Shomalli, Mr. Turk's mascot

sign and who oversaw at Steelton the manufacture of the material, and also by Mr. F. W. Cohen, the steel company's specialist in machinery, who designed the appliance with which the actual construction was done. The material, therefore, was specially adapted for its use, and the appliance, a gigantic steel traveler, or overhanging crane, was of original pattern and the largest ever built. The traveler was a huge bridge-like contrivance, shown in the illustrations, which ran out on the rails of the Mandalay-Kunlon to the shelf from which the viaduct started, and overhung the piers upon which the first tower was to stand. It was two hundred and twenty-five

THE COMPLETED VIADUCT

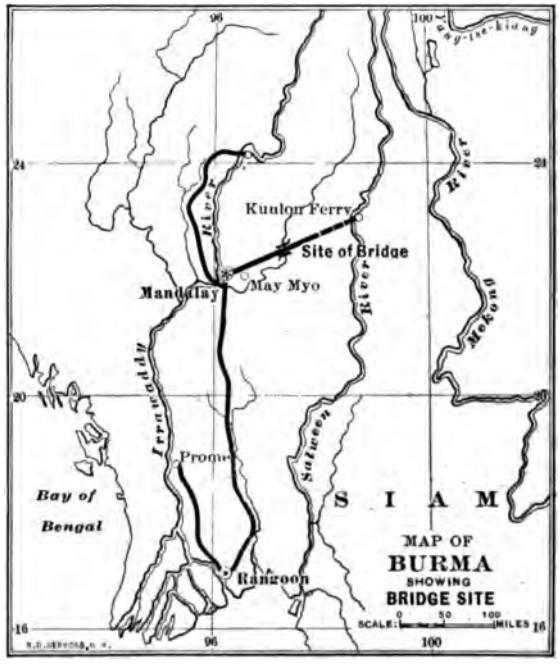
The spaces to the left of the track upon the towers indicate that the bridge was built for a double track: the single track is but temporary

feet long and sixty feet high, weighed nearly one hundred tons, and had the tremendous free overhang of one hundred and sixty-four feet. With this colossal machine the work was done. Upon it worked the Americans under Mr. Gross, some as assistant foremen, some as enginemen on the hoisting apparatus, others to man the traveler, and others to connect the steel girders and braces of the towers as they were hoisted into place.

The method of erection is plainly shown in the photographs. The great traveler was first constructed directly upon the railway track on the embankment at the south end of the bridge; then, as soon as it was in working shape, the material for the first tower was passed out through it in proper order, lowered and bolted into position in readiness for the native riveters. Then, as soon as the tower had been pretty well riveted, the big girders for the intervening space between the newly constructed tower and the abutment on the bank were swung out; the longitudinal stringers and the cross floor beams followed; ties and rails were laid for the trains with material; and tracks were laid upon the girders for the traveler to run on. When everything had been completed, tackles were made fast to the traveler and to the forward end of the girders, lines were carried to the winding engine, and the big hundred ton machine moved slowly forward to the edge of the newly finished structure: there it was bolted down in readiness for the next tower. To see it move ahead like a colossal drawbridge hundreds of feet in the air until the overhanging beams seemed on the point of toppling the whole mass over into the Gorge was a sight that the natives could never look on with equanimity.

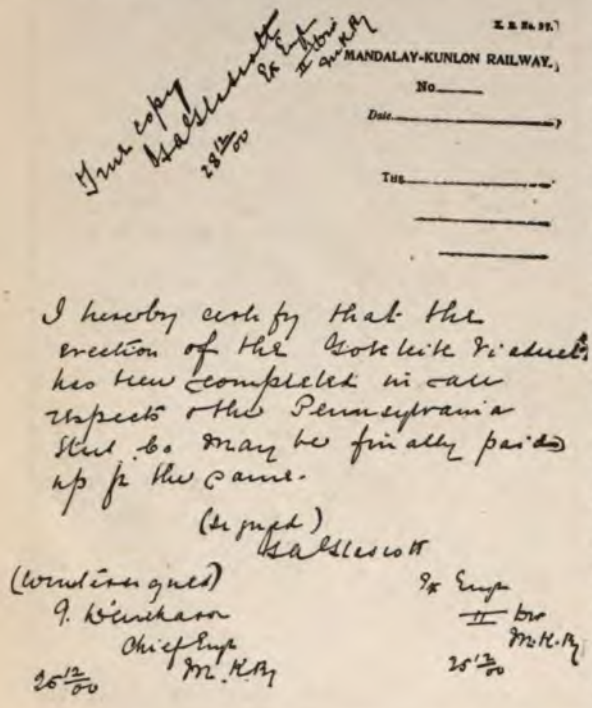
In all this work with the traveler the American workmen proved so efficient as compared with the natives, that, roughly speaking, I should consider one American equal to at least four natives. Divided into castes and subdivided into trades, the natives were able to do but one kind of work; though in an American rivet gang there are but three men, all capable of doing any part of the work, the Indian natives are obliged to have in their gangs a hammer man, a snapman—to hold the form on the rivets—a man to hold under the rivets the big iron dolly-bar, a man to heat the rivets, and one to pump the bellows. The bellows men cannot heat rivets; the rivet-heater cannot swing a hammer; the hammer man cannot hold the dolly-bar—and when the gang are obliged to move, they have to wait for the *khallassies*, or riggers, to rig their stagings. When the painting began on the viaduct, I found the painters, too, quite useless without the *khallassies*. Good workers at their trades they were, however, all of them, the riveters from Oudh and the Punjaub, used to bridge work, and the *khallassies*, sailors mostly from coasting vessels or P. & O. steamers.

Usually, on Indian bridge-work, the British engineers put a thousand or two thousand of these natives under one or two Europeans,



for they are as docile as sheep, and have the same respect for their European overseers that sheep have for a collie; but we introduced the innovation of having white men work. On the traveler, on the material as it went up, on the topmost points of the rising towers to connect the new pieces as the crane swung them up, the Americans—and a few British and German sailors I had picked up, with one North Carolina negro who spoke Hindustani—worked hard, to the measureless surprise and admiration of the coolies, so that as soon as the construction of the viaduct got well under way, operations went on with tremendous rapidity, some of the two hundred

foot towers, much like New York skyscrapers, going up in three or four days. When one thinks of the slow progress of an office-building, rising gradually week by week, the speed of these Steelton workmen with their train of coolies may be comprehended. One whole month, however, was spent on the great, double, three hundred and twenty foot tower directly on the natural bridge at the lowest point of its hollowed back. From 7 to 12, and from 1:45 to 6, the men worked. Over the traveler was spread an awning for protection from the sun, but as much of the work was done in the open, the men, dressed as thinly as possible in khaki, had to depend on white pith helmets to protect them from sun-



stroke, for sometimes the temperature rose to one hundred and twenty degrees, and at all times the Indian sun at midday is dangerous. But without intermission, except when the monsoon blew (as it did at times with force enough to whip the canvas awning off the crane and send it swirling over the bent tree-tops down the Gorge), or when, in the rainy season the whole sky emptied itself into the valley, the bridge was pushed forward. No heat daunted the men, and in the rainy season, from July to October, the rain had a comfortable habit of falling mostly at night.

When the day's work was over I usually settled up affairs, attended to correspondence, and developed photographs: the men read or wrote letters, or played poker—and some of them drank whiskey and fought. The natives watched the fights much in the manner of the politic Dearsley's coolies, in frightened groups, but as the fights were never serious, the combatants were allowed to pummel as long as they pleased. On one occasion, however, some of the men, not content with whiskey, indulged in potations of *shamshu*, a vicious Burmese product of the toddy-palm, and went whooping away through the jungle to carry consternation to the peaceful villagers of Nawnghkio, five miles distant. There one man accidentally shot in the leg a Chinaman on a passing caravan. Then ensued a comic opera performance. The Chinaman complained to the *Myook*; the *Myook* turned out fifty of his Shan police, crack shots all of them, but clothed only in straw hats and Martini rifles; the police marched out and surrounded our camp; and finally the assailant was persuaded to give himself up. Amid all the pomp of war he was marched away—to be released later with the loss of his rifle. It was only through the friendliness of the *Sawbwa* that the man was not compelled to learn Burmese wood-carving in the fort at Mandalay, for the Indian government is very solicitous regarding the treatment of natives; but he professed to believe that we had conspired with the *Sawbwa* to rob him of his gun. This was the only serious disturbance. A few of the men, as I have said, rashly drank whiskey, a perilous indulgence in that climate, and became sick, discontented and troublesome; the sober and industrious ones, except for an occasional touch of fever, retained excellent health, saved their money, and returned with savings of over a thousand dollars apiece for their year's work.

As the work progressed we received constant visits from Government and railway officials. Among them, of course, were a few subordinate engineers disgruntled at seeing foreigners encroaching on their formerly exclusive ground, and some who looked with disfavor on a contractor's going out to erect his own work—for most of the great bridges in India have been built by Government engineers of material shipped from England—but, in the main, the officials I met impressed me strongly with their splendid training and

great ability, their friendliness to our undertaking, and their amicable attitude toward the United States. Their visits, too, agreeably broke the monotony of life in the Gorge, for excepting an occasional caravan crawling down the old trade route from China with bales of pickled tea, our region was an almost absolute wilderness.

In December the viaduct was completed. The last rivet was driven; the last coat of steel-gray paint was put on; the natives were paid off and sent away with the usual *chit* or recommendation; the big traveler was removed; and the Americans were sent home with Mr. Gross, who was wanted at the East River bridge. The ground was cleared up, the track was laid across the viaduct, and the long steel structure was ready for the tests of the Railway Company.

There remained but one task. In neatly arranged piles by the side of the line lay the parts of the great traveling crane, the derricks, the cables, and all the tools used in the construction of the bridge: I hated to ship them all the way back to Steelton, and yet they had been a heavy item in the total cost of the structure—they had to be disposed of to the best advantage. After considering a while, therefore, I let it be known that the material was for sale. At once the Railway Company proceeded to snap up a selection of the tools; merchants from Mandalay and even from as far away as Rangoon sent representatives to buy; and from the collection of forges, anvils, and so on bought by the hard working, tiger shooting, much beloved Dr. Leeds, the American Baptist missionary at Thibaw, for use at his mission one would have believed the reverend gentleman on the point of becoming a bridge builder. Altogether I managed to dispose of all of the stock at a very appreciable profit; the sale had been a decided success.

The tests lasted two months. Heavily laden trains were run over the viaduct, and expert engineers examined every detail. After the most thorough scrutiny the railway accepted it, expressing complete satisfaction, and the Secretary of Public Works offered the congratulations of the Government of India on the successful completion of the undertaking.

FREDERICK D. TAPPEN

WALL STREET'S "PANIC SMASHER"—HOW HE HAS HELPED TO SAVE NEW YORK FROM DISASTER ON DAYS OF FINANCIAL ALARM

BY

WILLIAM JUSTUS BOIES

MANHATTAN ISLAND is a composite city with a touch of Philadelphia, something of Boston, and very much of New York. Up Harlem way you have the repose of the Quaker City, at Murray Hill and thereabouts you strike Boston, while further down you reach New York. And the center of the typical New York, the heart of everything that throbs with twentieth century city life faces old Trinity at Wall street. There you get to the great dollar factories, where men play with millions in much the same way as children play with soap baubles.

Wall Street is a little world by itself, populated in all branches of activity with the most wide awake, alert and keen set of men to be found anywhere. Of course there are failures, some scoundrels, and here and there weak ones, but from messenger boys up, they are a picked company who have accomplished something out of the ordinary.

In this little world everything depends on the banks. They are the life of the street, and the men in control of the principal institutions enjoy enormous power. Of these Frederick D. Tappen wields the greatest influence, because he has the confidence of financiers everywhere. He has had to do with whatever relief measures have been undertaken at times of panic, distrust or commercial disturbance. He is the one man to whom everyone turns when a bank has gone under,

or seventy-five per cent. money registers alarming distrust. For a quarter century he has been engaged in saving New York from panics, and restoring confidence at the moment when great institutions have been on the verge of collapse. He has had command of the Clearing House forces on the black Fridays and blue Thursdays of New York's darkest hours when nothing but superb generalship avails to save the day. And in such trying situations men, however superficial themselves, seek the strong character for assistance. In the test of a New York money panic, true leadership is clearly defined.

Mr. Tappen, although a very busy banker, takes time for art and wholesome recreation. But he is always in working trim, and has never acquired the vacation habit to the extent of a summer spent out of speaking distance of New York. He usually reaches his office by half-past ten in the morning, looks over his mail, and after attending to the business of his bank, sets out to visit the great moneyed institutions of which he is a director. You can always tell when he has returned from one of these expeditions by the little pile of gold laid aside on his desk. It represents director's fees taken in during the day. He is very fond of outdoor life and enjoys nothing better than a hard tussle with a twenty-pound bass off-shore the West Island Fishing Club in Rhode Island. He is apt to seek such recreation after a bank has failed, or when he has passed through some other Wall Street crisis.

Notwithstanding the strain of an active business life, he visits the New York Hospital regularly. He has long been a Governor of the Institution, and its present development is due largely to the interest he has taken in its affairs. Besides this he has been for years vice-president of the Bank for Savings, and is identified with a dozen other movements great and small which trace the unselfishness of city life. He hates sham, and the "beating around the bush" way of stating a proposition. Very direct, absolutely frank and withal genial and kind, he delivers in five minutes what many men would take half an hour to say. When he has spoken you are of no uncertain mind. His yes is always yes and his no, no. Said one of his Clearing House associates: "Tappen believes in his fellowmen as long as he can trust them. But let a person deceive him once, and he is like the man with the hot potato—something drops quick. That forever ends the intercourse. In that respect he is a regular Indian, for he never forgets a wrong. I would like to read the history he could write of financial New York! If he told all that he knew it would be hot enough to melt type and set some Wall Street respectables the merriest sort of a dance. As a friend he is most loyal. He will go to extremes to assist a comrade, for he simply cannot stand suffering."

I have watched him in trying moments when all New York was depending on him to prevent a smash. One such occasion was May 9th last when the strongest houses in Wall Street were tottering under the awful burden of "panic Thursday" obligations. He sat at his desk, calm, serious, awaiting the psychological moment. It came. Money jumped ten points an hour, reaching sixty per cent. at one o'clock, which meant that unless something was done there would be big failures by three. It was a day that adds ten years to a man's life; some almost died of the strain. Most of the burden fell upon Mr. Tappen, for J. Edward Simmons, William A. Nash and other strong men of the Clearing House were out of town, and there was not time for a moment's delay. But within half an hour Mr. Tappen had the situation well in hand, chatting quietly with the great financiers whom he visited in the interests of organizing a pool for money market relief. The banks responded liberally; they subscribed all the money he needed, and before the crisis was reached he had the wherewithal to avert disaster.

In the brevity of dollars and cents this is the literal story of his half hour's work:

Banks	Amount
J. P. Morgan & Co.	$2,000,000
Hanover National	3,000,000
Fourth National	2,000,000
Chase National	1,000,000
National Bank of Commerce	1,000,000
Bank of America	500,000
Gallatin	1,000,000
Bank of New York	1,000,000
Mechanics' National	1,000,000
Seaboard	1,000,000
Merchants'	500 000
Republic	1,000,000
Manhattan	1,500,000
First National	2,000,000
Corn Exchange	1,000,000
Total	$19,500,000

At that critical juncture of what might have been the greatest panic of modern times this $19,500,000 was of five-fold its ordinary value. Within a few minutes after collection

the fund was being distributed right and left on the Stock Exchange to the relief of frantic "bears" and unfortunate speculators all the way from New York to San Francisco. For in such times it is the sentimental effect which counts, and when the wires click off the willingness of New York banks to untie their purse strings commercial centers everywhere are reassured, with the result that confidence is soon restored. Most of the money was loaned around sixty per cent., so as to insure its employment by those who needed it and to keep it out of the hands of speculators, who would have gobbled it up to re-lend at a profit. Governors of the Bank of England and experienced financiers everywhere have always asked panic rates for money under similar conditions. Nothing less would accomplish the end in view.

Viewing the incident now in the light of what Mr. Tappen's services were worth to the investing community that day, I recall no more picturesque scene in recent financial history than the man of seventy laboring with those of fifty to believe in themselves. Sitting erect at his desk, receiving reports now and then from trusted emissaries, despatching clerks here and there for important information and chatting with friends over the telephone, he kept in touch with everything that transpired in the district around. And this was the preparation for the decision, which was arrived at instantly when relief measures were found to be necessary. For when people become panic stricken and throw over everything on the impulse of the moment, it takes absolute knowledge of the situation to restore order out of chaos and bring them to their senses.

During the panic of 1893, when loan certificates were resorted to by the Clearing House and the currency famine became so acute as to bring small bills to four per cent. premium, Mr. Tappen again came to the rescue of the banks. At that time the disturbance was more prolonged and in some respects the most serious ever encountered. The strongest institutions were in danger, and you had to beg your bank to cash a check. But the famous "loan committee" of that year, with Mr. Tappen at the head, weathered the storm and saved the day. It has been so ever since. Two years ago $12,000,000 were raised in short order to smash a one hundred and eighty-six per cent. money rate. On that occasion it took Mr. Tappen from two o'clock till half past—only half an hour before the Stock Exchange closed—to get the banks to chip in. By three money had fallen to a reasonable basis.

Next to a panic the failure of a bank is the most trying experience financial New York has to encounter. Preceded always by rumors, the bank's credit is ruined before the real crash comes. Suspicion then falls on the depositors, who have to "show solvency" independent of all resources at stake in the bank. When the Seventh National failed in New York a few weeks ago the Stock Exchange learned of the trouble hours before depositors were apprised. It came about in reports that a bank was in difficulty and that the Clearing House committee was in session. This proved to be true, for in all his Wall street experience Mr. Tappen never passed a more anxious day. The bank was found to be more than $900,000 short in its clearing house account, which had to be settled before three o'clock if it was to be saved. Twenty minutes before that hour arrived a millionaire's son was induced to take the presidency of the bank and get his father to help it through. The next morning another millionaire paid the day's debit balance, but on the third day the Seventh's country correspondents called for their funds and the concern went under. It was the old story of overloans and poor management. But the Clearing House committee saw to it that no other banks were bitten, and Mr. Tappen's statement published on the morning of the failure soon restored confidence.

No Wall street career ever gave a man a more enviable reputation than Mr. Tappen possesses today after half a century's service. Long contemplation of cold dollars has not chilled his blood into ice water, or made him forgetful of the early struggles that every man who is worth his salt has passed through. The humblest clerk in the Gallatin National Bank can go to him at any time assured of sympathy when in trouble or of assistance if really in need. And in these days of great fortunes it is refreshing to find a man who has had courage enough not to become a multi-millionaire when pursued on all sides by temptations to be one. Although within a stone's throw of the Stock Exchange, he never speculates, and he looks upon a "flyer" as having all the characteristics of dynamite.

To the Palm Beach division of the Wall Street contingent, who seclude themselves behind plate glass partitions with a half-dozen lackeys on guard at the door, Mr. Tappen's willingness to do business in full view of the world at the front of his bank is little understood.

Mr. Tappen is of Dutch extraction, his family having settled at Fort Orange, near Albany, N. Y., in 1662. He was born in New York in 1829. He received his education at the Columbia Grammar School and at the University of the City of New York; graduating in 1849. A year later he plunged into banking and has been at it ever since. He became specie clerk of the National Bank of New York (now the Gallatin National) in 1850, rising through the various grades of individual bookkeeper, general bookkeeper, receiving teller, paying teller, assistant cashier, and so on up to the presidency.

His experience with panics began in 1857. In that year he became cashier of the Gallatin National (after one day's service as assistant cashier), at the moment when New York banks were engaged in a life and death struggle for existence. The Clearing House could do nothing, for the banks seemed bent on the "cut throat" principle in the pursuit of selfish ends. In the stress of such difficulties, however, the scheme of mutual assistance, which has since been developed into the organization of New York's wonderful system of associated banks, has been evolved. And to each stage of growth Mr. Tappen has made a distinct contribution. In 1873 he served on the committee organized for the purpose of suggesting necessary reforms in the practical operation of the banks, and in 1884 he gave his time to the committee engaged with the improvement of general banking practises. In 1889 he served as chairman of the committee which formulated New York's famous system of country check collection charges.

He carries his seventy-two years with the vigor of a man of fifty. He is President of the Union League Club, and connected with a dozen other social organizations.

THE RESULTS OF CIVIL GOVERNMENT IN PORTO RICO

BY

WILLIAM H. HUNT

SECRETARY OF PORTO RICO AND PRESIDENT OF THE EXECUTIVE COUNCIL

WHEN Porto Rico came under the flag of the United States, Congress and the people generally believed that the Island should have a limited self government; yet no Senator of the United States has ever visited it and it is doubtful if more than ten Representatives have ever seen its shores. The people of Porto Rico had by their conduct during and after the war impressed themselves upon the Americans and gained their respect.

On May 1, 1900, military rule expired and civil government was set up. Between the inauguration of Ponce de Leon, appointed first Governor by the King and Queen of Spain in March, 1510, and that of Charles H. Allen, appointed by President McKinley in April, 1900, nearly three hundred and ninety-one years had elapsed, and there had been one hundred and eighteen Spanish governors and three American military governors. As soon as the new government began, two political parties struggled to assume active participation. Entire impartiality was shown in the selection of appointees, but through a misunderstanding of the purposes of the government to keep aloof from local party politics, the Federal party soon withheld hearty coöperation. The government, however, moved on smoothly and endeavored to make it apparent that the United States was going to help the people of Porto Rico and not hold them where they were found, and much of the indifference passed away.

The Executive Council consists of six American and five Porto Rican members. The functions of the Council are not quite as comprehensive as many suppose them to be. It has no power to pass a law except with the concurrence of the House of Delegates. In the several government departments the President's appointees are assisted by experienced natives, it being a fundamental policy that great regard be had for Porto Rican institutions, native religious ideas and native freedom. No matter how intense was the ardor of many natives for the complete "Americanization of Porto Rico," we tried not to lose sight of the fact that the progress we hoped to make must necessarily be a work of long time and much patience.

The "Federal" members of the Executive Council resigned in September. They retired because they thought the electoral districts established by the Council would give their political opponents advantage in the election of members of the House of Delegates, which was to be held in November. Let it be remembered that, with but a very few exceptions, every native citizen of Porto Rico is an enthusiastic devotee of one or the other local party, and that party devotion means political bitterness. There is little tolerance towards an opponent, while no sacrifice for one's own party is regarded as too great. Politics enter into social affairs, business pursuits, and occasionally into family affiliations. All this is but another complexity; yet time is already assuaging former animosities, and as the Island draws closer to the United States proper, the recollections of Spanish days will be dimmed and tolerance will be more common. It is a safe prediction that before long the question of trade relations with countries other than our own will invite attention, and party lines as drawn in the United States will prevail in Porto Rico. Whether a man favored or opposed Sagasta's ideas of autonomic government will then be of infinitely less consequence than his attitude upon the question of exports and imports.

Association with leading natives has proved that there are a great many true patriots in the Island—men whose very highest ambitions are for the elevation of their people by the wisest modern methods, men who have labored enthusiastically for many years to free themselves from the inferior moral, educational and political conditions which circumscribed their lives. To such the United States owes lasting respect for their invaluable aid, although they themselves ask no recompense other than the liberty that has come and the continuance of the education that has been begun.

Not many months after the Executive Council was organized there arose the question of what salaries should be fixed for the native members, inasmuch as the Act of Congress required the Legislature to award the compensation. The administration members asked the natives to speak freely on the matter, but they were reluctant to do so. But we earnestly pressed for their views and finally Dr. Gomez Brioso, appointed a Councillor to fill one of the vacancies left by the withdrawal of the Federals, said:

"My fellow Councillors: I would prefer not to speak on this matter, because it is delicate and affects me personally. But you beg us to say something. Were I to speak from my selfish nature alone, I should be glad to have my salary put at a very large sum, where ease and tranquility of mind might be had; but speaking from my heart I must tell you a story of myself. When the American army landed at Guanica in Porto Rico, I was in a dreadfully sad state of mind, for I loved my country with all my heart and my sentiments were all for my poor people. So I shut myself up in my house and prayed God to guide me to the right and patriotic course for Porto Ricans to pursue. I had been educated in Spain and only knew of the greatness of America by reading of its history and people. But I had seen my native island kept down by Spanish misrule; I had seen misfortune and sorrows increase; I knew the sad condition of my people; I knew that they never had known what liberty was, and that under the old form of Government, with its hardships and wrongs, they never would. Still it was a terrible trial for me; then I went out of my home, telling my family and my friends that the best destinies of my people were with the United States and not with Spain, and that thenceforth I should sympathize with the Americans. I had always served my people wherever I could be helpful to them, and I intended to continue to do so, not expecting or desiring public place; and when I was surprised by the honor of appointment to this Council, I only agreed to serve because I thought it my duty to Porto Rico, my home, my country. We are an emotional, intense people; we speak impulsively, and since I have come among you and watched the calmer and more deliberate manner in which my fellow councillors from the North conduct their actions and proceedings and have observed your patriotic and inde-

fatigable labors for Porto Rico, and since I have felt the influence of your high personal characters, there is no way by which I can sufficiently acknowledge the gratitude my people owe you, and no words can express the thanks I give for the wisdom of the choice of the way I took at that eventful time of my life. I have no thought for what money compensation you award us—if it be nothing, yet my heart will be the same, my debt will be just as great, and so long as I can keep my family from actual want, I shall ever believe it the noblest ambition for my people to serve them under the United States as a member of this Council."

Delivered in perfect Spanish, with the deepest fervor of manner, the spontaneous sentiments of the Councillor were very solemnly and admirably received. Every other native councillor arose to concur in the expressions of Dr. Brioso.

The organization of the first house of delegates was an interesting sight. More than thirty natives and one young American who had come to Porto Rico in a soldier's uniform, met to undertake popular legislation. The compliment of an election to the speakership was tendered to Señor Francisco M. Quiñones, distinguished in the island for leadership of the movement to abolish slavery in 1873, but extreme old age forbade his undertaking the duties, and Señor Manuel Rossy, a prominent lawyer from San Juan, was elected. Señor Rossy does not speak English and has never been to the United States, but he is familiar with the advanced state of our Nation and speaks eloquently of the destiny of Porto Rico under the new régime.

One of the remarkable signs of progress was the way in which the Legislature moved after the first month. Except that the language was Spanish instead of English they were about what one would find in an ordinary State legislature. Half a dozen members took the more prominent parts, the debates were often along the same lines of thought that guide in American legislative bodies and the rules of procedure were taken from an American book. Politics, however, held a stronger sway and secured greater unanimity of action than would have been possible in the United States, and more I fancy than will ever again be attained in Porto Rico, for independence of political action is a growing disposition.

To found an educational system was also part of the great work. Think of three hundred and fifty thousand children of school age and not one school house owned by the public on the Island! But systematic and vigorous execution soon told and today there are forty thousand children being taught by capable instructors and thirty modern American school houses being constructed. In April the "Columbus rural school" was dedicated at Carolina. This was the first rural school house ever built in Porto Rico. It looks like a New England school house, capable of holding forty pupils, is painted the common lead color, has ante rooms, blackboards and comfortable American desks and seats. The flag flies over the top, the "Star Spangled Banner" is sung by the children, English is taught, and those who attend are bright, intelligent, ambitious. It is noticeable, too, that educational interests meet with hearty coöperation among Porto Ricans of all classes, rich and poor, influential and humble.

By common consent politics finds but little hold in this branch of the government. The drawback to a more extended education is lack of greater means. The government of the Island spends four hundred thousand dollars a year, all it can afford, and this year President McKinley awarded two hundred thousand more from funds allotted to Porto Rico by Congress. A great start has been made and henceforth the annual school output will be the most important permanent agency in the work ahead of the government. It is the real solution of "the problem"—the field should invite the philanthropist.

In fiscal ways, legislation was had implanting revenue systems akin to those prevalent in the United States—direct taxation of one-half of one per cent. upon property together with complete excise systems. To the scheme and application of these laws there has been an earnest opposition by many property holders, and American newspapers taking the question up have given the Island a good deal of attention and some of its officials an unexpected notoriety. But all this arose largely because of misunderstanding, and was inspired by the characteristic and real apprehension of the people at any radical economic change before free trade with the United States should come. This dread of innovation is observable in many ways, yet it is not hard to account for. A people who have known so few changes in centuries of time, and who seldom realized improvements in the changes which did come, who are not travelers, are

naturally timid of novelty in anything bearing upon their public condition, even when brought by a nation conceded by the few who know it well, to be powerful and generous in its aims.

But since the law has been in operation its *principles* are very generally approved of and except for some alleged minor defects it is doubtful if any considerable number would ask for its entire repeal. Property holders realize, too, that now that free trade between Porto Rico and the United States does exist, taxes to provide annual revenues must be had and uniformity of levy should prevail. It takes two million dollars a year to run the government. It is thought that of this sum, under free trade, customs on imports from foreign countries will yield seven hundred and fifty thousand, excise seven hundred thousand, and other taxes will yield the balance as the total assessment of the Island aggregates about one hundred million.

The judiciary of Porto Rico is far better than it is often said to be. The American judges speak very highly of their Porto Rican associates, and are outspoken in respectful acknowledgment of their sense of justice and impartial administration of the law. In a recent decision made by one of the District Courts, the judges unanimously dismissed a case upon the well established principles that jurisdiction properly obtained by a Federal Court will be retained by such Court, and will not be entertained by an Insular Court in conflict with the Court first having such jurisdiction. To support this doctrine the judges in a written opinion cited the decisions of the Supreme Court of the United States. This means a long step forward for Porto Rico—a departure full of significant good.

While touching on judicial affairs, mention must be made of the jury law. "The right of trial by jury is hereby established in Porto Rico," proclaims the opening sentence of the first clause of the first law ever passed by the people of Porto Rico. The honor and responsibility for this statutory mandate belongs to Dr. Jose C. Barbosa, of the Executive Council, a far-seeing, clear-headed patriot, the

HERMINIO DIAZ NAVARRO
Member of the Judicial Advisory Board. He has held many important offices under both Spanish and American rule

FRANCISCO DE PAULO ACUÑA
Who has been Associate Judge of the Island's Supreme Court, Secretary of State and Member of the Advisory Board

DR. JOSE C. BARBOSA

One of the founders of the Republican party. He is identified with a newspaper "El Pais" in which he has published his ideas favoring close relations with the United States

son of an humble mason. Dr. Barbosa was educated in the United States, and has passed his life in devotion to the advancement of Porto Rico through American means and under American protection.

As yet, however, no one has demanded jury trial. The reasons for this may be the characteristic hesitancy to make practical use of so new an institution, even though all welcomed it as a safeguard; or it may be due to the increase of confidence in the Courts since the coming of American judges.

The Spanish built but few roads in Porto Rico, so that means of communication and transportation have been absolutely primitive —ponies with baskets, oxen and foot-packers. The Americans set about to change all this as fast as possible, and many miles of roads have been built, and much money has been and is being expended to afford the people opportunities to get their produce to markets and their children to school. Rich sugar, fruit and coffee districts are being made accessible, and property values being enhanced. Work of this construction naturally falls within the Interior Department of the Island, as does control of the harbor shores, care of public buildings and of the telegraph system. Porto Rico, by the way, owns and operates its principal telegraph lines, but thus far public ownership has not been profitable.

A year has been crowded with experiences, the most valuable lessons of which have taught us that the people, though easily excited, are naturally kind, docile, and becoming more hopeful. The intensity of political prejudices has lessened somewhat, as it has been demonstrated that the new nation means to help them all without discrimination to a better and higher condition. Increased evidences of confidence in the future come, too, as the people and the officials meet oftener. The result is more active coöperation than there was at first, better understanding by the people of how to help themselves, and further adaptation to the present methods of public business. Municipal management has improved, budgets are being cut down, while police and other public services are more efficient.

MANUEL F. ROSSY

Originally a member of the Autonomist party, but became one of the founders of the Republican party, favoring close relationship with the United States

THE PORTO RICAN COAT-OF-ARMS

BY

FRANCIS E. LEUPP

THE coats-of-arms of some of our states and territories are enough to give heraldic scholars a nightmare. One, for instance, shows a soldier of the Civil War aimlessly waving a flag in a wheat field, with a river and a stern-wheel steamboat for a background. That sort of thing is natural, perhaps, in a pioneer state proud of its war record and eager to advertise its resources. But Porto Rico, the first colony ever held by the United States, resolved to mark its entrance into this novel relation by adopting a seal at once heraldically correct and artistically good. To that end a committee was appointed, including the Governor and Secretary of the Island, who in turn appealed for advice and aid to Mr. Gaillard Hunt, the chief authority on the great seal of the United States, and author of the historical monograph on the subject.

The old seal of Porto Rico, granted by Spain about the middle of the sixteenth century, presented three leading features: A rock in the ocean, the lamb of St. John, and designs of the Spanish flag and castle. The committee wished to retain as much as possible of this historic relic, but was compelled at last to let most of it go. The shape of the shield, however, was retained, and also the rock, after being so remodeled as to copy, with some exaggeration, the contour of the Island as it appears to a voyager before entering the harbor of San Juan. Behind the rock is shown the rising sun.

The choice of a crest presented the next difficulty. No heraldic animal was suggested as having a peculiar local significance, except the game-cock, whose present popularity the government is doing its best to suppress. The native flora was thoroughly sifted with a view to finding a suitable tree. The mango was rejected because it too strongly resembles an oak, and the palm because its trunk is too snake-like. The bust of Columbus was next considered, and, though acceptable from a heraldic point of view, it was disappointing in artistic effect. One of his caravels, however, conveyed so happy a suggestion of his work, and made so striking a figure above the shield, that it was adopted without more ado.

When it came to the motto, the committee decided that Spanish was out of the question, since the new official language of the Island was English, and English, because it was such an unknown tongue to most of the people; so, following the prevalent practice in armorial achievements, Latin was chosen. Mr. Hunt entered into correspondence with several of the most eminent Latinists and general scholars in the country. Of the mottoes submitted by them, the most poetical had for its central thought the idea of a star shining brightly in the heart of the sea; but this was open to the objection that the star is with us the recognized symbol of statehood, a condition to which Porto Rico has not attained. The successful suggestion presently came from a Washington woman, and, almost simultaneously, from Dr. David J. Hill, Assistant Secretary of State. It is from Ovid: *Prospera lux oritur*—literally, "A happy day is dawning." It is especially appropriate to the device of the sun rising over a flushed sea.

THE "CELTIC" AT SEA

THE LAUNCHING

GIVING A VIEW OF THE PROPELLER

THE "CELTIC" ON THE STOCKS

THE BIGGEST SH

THE NEW "CELTIC," 700 FEET LONG AND OF 20,880
ECONOMY OF LARGE TONNAGE TODAY—THE "GI
FAILURE BECAUSE SHE WAS BUILT FORTY YE
WIDESPREADING EFFECTS OF THE INCREASED

BY

CHALMERS ROBERTS

THOSE of us who were taught primary science between 1860 and 1890 will remember the pictures in our text books of the *Great Eastern* and the elaborate explanations given for Brunel's monstrous failure. It was conclusively proved to our infant minds that ships of such a size always had been and always would be impossible. Nowadays our old instructors seem themselves as infantile as the Italians who scoffed at Columbus and his globe. The *Great Eastern* has been excused for her shortcomings. Simply as an iron hull structure she left little to be desired. The faults lay elsewhere. In 1854 the science and practice of the naval architect were far in advance of those of marine, railway and even dock engineers, while steelmakers were for all shipbuilding purposes non-existent. Naval architecture and marine engineering are now nearly always spoken of as twin sciences. The present writer was guilty of so calling them in an article in this magazine last Winter on American shipbuilding. The slightest investigation will show that they have by no means grown as twins. Really it is only within the last ten years that they have found common growth. While today we celebrate the appearance upon the Atlantic of the new *Celtic* as the vessel of the greatest displacement in the records of naval architecture (37,700 tons), there is now no hesitation in saying that tomorrow may see another of 50,000 tons.

The *Great Eastern* did act as a deterrent example for years. After her and indeed until about ten years ago, there were no ships afloat of more than 10,000 tons register. And the *Great Eastern* record of 18,915 tons has held good until this year. The *New York*, the best known of the earlier big ships still in use, was only 10,500 tons. The *Campania* went up to 12,9
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twenty-five per cent. better than the old one, while she will carry twelve times as much as the old ship did, so that in one year the new vessel will do the work of something like fifteen old *Oceanics*, while the working cost will only be increased about four times. That is to say, the *Celtic* will carry about four of the first *Oceanic's* cargoes at the cost of one such cargo on the older vessel.

If one looks into the future of big ships it will bring into view many important industrial changes, chief of which will be the construction of harbor, wet and dry dock and loading facilities. These must be on a scale which a few years ago would have been thought wasteful and useless. The necessary accommodation for monster ships may make great changes in shipping centres. The cities which furnish the deepest harbors and the longest docks will get the trade of the big ships. Although in England harbor work has so far been done by local authorities and not by the general government as in the United States, public men in England are rapidly awakening to the fact that it is a subject closely allied with all questions of commercial supremacy; and it will probably not be long before one hears of river and harbor appropriations in Parliament. The port of Southampton is a shining example of what profit there is in providing ample dock and harbor facilities.

Looked at from the point of view of the British shipbuilder, the *Celtic* points to a tendency towards immense carrying power rather than great speed. For although her tonnage is thirty-five hundred greater than the new *Oceanic*, her engines will only give a speed of seventeen knots, four less than the smaller ship. And on the very day that the *Celtic* was launched, blocks were laid and the keel of a sister ship set down on the ways just vacated. It is yet a question whether there is to be any attempt among British companies to recapture the Atlantic speed record from Germany. One great British shipbuilder (with whom I discussed the question but who would not allow me to quote him) said that his firm was disposed to wait for the perfection of the steam turbine, or until British shipowners were in the possession of the handsome subsidies which enable German mail-carrying companies to build *Deutschlands* and *Kaiser Wilhelms*. Apparently, the steam turbine will come first.

It is difficult by any description to convey to the mind any conception of the size of this latest member of the Anglo-American passenger fleet. Even a sight of her gives you little idea, she is so perfectly proportioned. If I should tell you that were the Washington monument placed on the roof of the Capitol in Washington, the *Celtic* stood on an end would be nearly equal to these combined heights, you could even then scarcely measure the distance in your mind. We have come to a point where it is hard to find a simile for these ocean monsters. They used to be called "floating hotels." When this did not do justice either to their size or their magnificence, it was changed to "floating palaces." I should call the *Celtic* a floating town. A thousand men were often at work upon her, and practically lost to each other. She has no less than nine decks. With a full complement of passengers she will be a home on the Atlantic for 3,294 persons, more than twice the number of people the biggest hotel on earth could accommodate. And it must be remembered that, unlike the hotel, she is compelled to feed all of these people as there are no outside restaurants available. To look after these temporary citizens will require the services of a resident force of 350 people. Those who have seen the later ships may gain some idea from the fact that her registered tonnage is 3,600 greater than that of the *Oceanic*, and that her displacement tonnage is nearly double that of the *Kaiser Wilhelm der Grosse*. Alongside her, the battleships and armored cruisers of today are so small as to be practically outside the limits of comparison. The newer battleships may have her beam and her draught, but she is longer than any of them by over 300 feet, and her displacement is much more than double. When Lord Goschen was at the head of the admiralty he was very proud of the plans for what he called the "mighty cruisers" of the *Drake* class, the largest fighting ships ever planned. The *Celtic* will be 200 feet longer than these, and her displacement is two and a half times as great.

The fact that there has been no great amount expended on speed facilities has led the owners to make her into what may be called the poor man's passage boat. The luxurious *Oceanic* reached a climax in rich men's boats. These two later ships will cater to the man of moderate means who cannot afford the *Oceanic*.

I believe it is no exaggeration to say that the steerage passenger on the *Celtic* will be much more comfortable and in much better quarters than was the saloon passenger of a generation ago. When Mark Tapley took and deserved so much credit for being jolly on the packet of forty years back, the comforts of first-class passengers were of the most primitive sort. Even twenty years ago the fastest mail boats could not compare with the *Celtic* of today, which makes no pretensions either to speed or magnificence. She goes in only for solid comfort at a moderate price.

There is accommodation on board altogether for 2,859 passengers. There are quarters on the upper, the bridge, the upper bridge and the boat decks for 347 first-class passengers. Provision is made for 160 second-class passengers on the upper and bridge decks aft, where the staterooms and apartments for general use are most comfortable. In fact, the dining saloon, in its finish of white and gold, shows very little difference when compared with the same saloon for the first class. It is rather curious how little advantage is taken of second-class accommodations generally on the trans-Atlantic ships. People who have no hesitation in traveling second and even third class on trains insist on going first class on ships, where often the difference in accommodation is not more marked. Even though the owners of the *Celtic* look for some advance in second-class passengers, the figures show how even they have taken the prejudice against that part of the ship into consideration. There are places for 347 first class, 160 second class and 2,352 third class. It is, as was said before, in the third-class accommodations that the most noticeable progress has been made. Accommodations are partly in separate cabins and partly in open berths, the latter in top and bottom pairs, fixed back to back. In this way passengers may reach and leave their berths without disturbing their neighbors. Married couples and single women will be placed in the after end of the ship and single men in the forward end. A dining room in polished pitch pine, accessible from both ends, a smoking room and a general room are included in this section.

To attend to these passengers there will be no fewer than 179 stewards. The deck complement of men will be 64, and 92 men will be employed in the engine rooms and stoke-

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FINANCING TRUSTS

THE "UNDERWRITING SYNDICATE," THE MACHINERY WHEREBY GREAT COMBINATIONS ARE MADE, AND LARGE PROFITS OFTEN EARNED, WITHOUT ANY CONSIDERABLE INVESTMENT — THE FINANCING OF THE STEEL TRUST, THE "BURLINGTON DEAL," THE SUGAR TRUST, ETC.

BY

E. J. EDWARDS

WHEN the United States Steel Corporation was organizing, there was doubt whether enough money could be got to do it. Then an "underwriting syndicate" was organized, pledged to take enough of the stock and bonds to guarantee a market for as many of them as the promoters should find it necessary to dispose of.

It is understood that this underwriting syndicate pledged itself to accept as much as two hundred millions of the obligations if a market were not found elsewhere for them. This was by far the largest obligation ever undertaken by an underwriting syndicate, at least in the United States. It would have been impossible a few years ago. The pledge simply bound the subscribers composing the syndicate to take, each in proportion to his subscription, the obligations issued by the new corporation provided they were called upon to do so. It is admitted by some of the subscribers that they were called upon for twelve and one-half per cent. of their subscriptions in cash. This amount was needed to perfect the organization. Twelve and one-half per cent. of two hundred millions is twenty-five millions, and the presumption is that this sum is all the cash that the underwriting syndicate will ever be called upon to furnish, for no difficulty has been met with in marketing the securities.

It might be thought that capitalists would be reluctant to pledge themselves to pay in cash two hundred millions of the capital of a new industrial organization if called on to do so. But instead of timidity there was the utmost eagerness. The financial managers were overwhelmed with applications from all over the United States from men of wealth who were anxious to become members of the syndicate. Many applications were rejected.

The same experience was met with when an underwriting syndicate was organized to finance the "Burlington deal," whereby the Northern Pacific and the Great Northern railway corporations guaranteed the bonds which were issued to pay for the stock of the Burlington Railway. The general impression is that this underwriting syndicate pledged itself for any amount up to seventy-five millions. The applications for admission to it were numerous and urgent, and many men were excluded.

The eagerness of capitalists to subscribe to these underwriting syndicates was the chance of handsome profits without large actual payments. The general understanding in financial circles in New York is that the subscribers to the Burlington syndicate receive a profit of five per cent. upon their subscriptions, and that, too, without the payment of any cash other than the first payment of ten per cent. The presumption is that the United States Steel syndicate will be equally fortunate, although its life may be somewhat prolonged. The day of settlement with the subscribers may not come for some time.

It is impossible to get details of the organization, membership, profits or losses of an underwriting syndicate, chiefly because these organizations have many of the characteristics of a "blind pool." They are private, if not entirely secret. The whole management is entrusted to the capitalists who organize them, and it is from these managers that the subscribers receive their checks if the financing be successful.

The reports of the handsome profits that have come to the favored subscribers to underwriting syndicates tempt capitalists when these are managed by certain financiers who have gained very high confidence. For instance, when Mr. J. Pierpont Morgan undertakes to finance an industry or a railroad and

organizes an underwriting syndicate, so great is the confidence in his judgment, and so many have been his successes that, usually, all that is necessary is to send out a circular to those whom he wishes to have join him, and favorable responses are immediate. It seems to be the easiest way not only to make money, but to make great amounts of money, simply to pledge one's self to accept a certain amount of capital stock of a proposed industry or railroad in case the subscriber be called upon to take it. It has often happened that a subscriber has done no more than sign his name to a subscription. Then after waiting until the industry or the railway reorganization has been financed he has received a check usually for his proportionate part at five per cent. of the total capital stock or bonds that have been marketed by the syndicate.

If this rate of five per cent., which is understood to be the one generally charged by underwriting syndicates for their services, is accepted by the United States Steel Corporation, the syndicate will receive ten millions less ten per cent. (for the managers of a syndicate themselves usually receive ten per cent. of the amount earned by the syndicate for their services). If this be the proportion of division, the managers of the underwriting syndicate that financed the United States Steel Corporation will receive for their services one million dollars, as well as their share of the remaining nine millions, which is the syndicate's remuneration.

The underwriting syndicate is a comparatively new method of floating important industrial or railroad corporations or the securities created by reorganizations or combinations. Undoubtedly the first suggestion of it was furnished by the syndicate operations in 1861, at the time when the Government of the United States was seeking a loan of gold. The national treasury was in a most unsatisfactory condition, and our national credit was not very good. The Secretary of the Treasury, Mr. Chase, found it necessary to replenish the treasury's gold supply. He went to New York and met the bankers at the city home of the late George S. Coe, at that time President of the American Exchange National Bank. After a long consultation they agreed to form a syndicate, admitting to it certain bankers of Boston and Philadelphia, to lend the Government fifty millions in gold,

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Belmont was prominently associated, agreed to pay to the Government this 3,500,000 ounces of gold coin for these four per cent. bonds. Mr. Morgan furthermore agreed to prevent the export of gold for a period of six months. In other words, he pledged himself so to manage foreign exchange that the gold paid into the treasury for these bonds could be kept there.

The Morgan-Belmont Syndicate was denounced by some politicians, the denunciations even being made in Congress, and the impression exists to this day that it was a very one-sided bargain, with all the advantages gained by the syndicate, with all the sacrifices made by the Government. It is true that this syndicate got four per cent. bonds at a very low figure. They went to a premium of nearly 112 immediately, and afterwards so increased in price that somebody made a handsome profit. But Mr. Morgan had pledged himself and his syndicate to prevent the exportation of gold for a period of six months. If the normal rate of exchange happened to be favorable, then the Morgan-Belmont Syndicate was sure of a reasonable profit through the appreciation in the value of these four per cent. bonds. But, if the price of exchange proved to be unfavorable, then it would be necessary for the Syndicate to provide exchange at a loss. This is understood to be exactly what happened; and the general impression in financial circles now is that by reason of the heavy expenses entailed upon the Syndicate in their efforts to prevent the exportation of gold, there was actually little profit in this transaction. The difference between the price at which the Syndicate received the bonds from the Government and the price at which these bonds were marketed, probably did little more than cover the cost of providing exchange at a loss so as to prevent the exportation of gold.

The service of this Syndicate to the Government and to the people was of almost inconceivable value. It was worth to the United States far more than any possible gain that Mr. Carlisle might have made had he sold the four per cent. bonds for the higher premium at which the Syndicate marketed them.

But underwriting syndicates are by no means universally successful. There have been heavy losses incurred by some of them.

THE REMARKABLE WORK OF THE ARNOLD ARBORETUM

A SUPERB COLLECTION OF ALL THE TREES AND SHRUBS THAT CAN LIVE IN EASTERN NORTH AMERICA — IMPORTANT RESULTS OF THE SCIENTIFIC STUDY OF TREES AND FRUITS — CLASSES IN IDENTIFYING TREES

BY

SYLVESTER BAXTER

Illustrated from photographs made especially for THE WORLD'S WORK by John Andrew & Son

"A PRECIOUS living treasure which the last quarter of the nineteenth century has provided for later centuries," was the phrase of President Eliot, referring to the Arnold Arboretum, when he presented Director Charles S. Sargent with the degree of LL. D. at the last Harvard commencement. Thus he characterized an institution, a combined scientific station and park, which is the greatest of its kind in the world. It is the source of the knowledge that makes many of our parks, and private estates, and railway station grounds beautiful, and it is the place where Professor Sargent carried on the study for the tenth census, which resulted in the establishment of national forest reserves. It is a portion, at the same time, of the Boston Park System and Harvard University—devoted to the collection, cultivation, and study of trees, especially the trees of North America.

REMARKABLE WORK OF THE ARNOLD A

The Arnold Arboretum and Bussey Park—as its full name runs—lies in the West Roxbury District of Boston, the second in size of the unbroken series of pleasure grounds girdling the city. Through the joint efforts of Professor Sargent and Mr. Frederick Law Olmsted arrangements were made by which the city took land from the University by right of eminent domain, laid out roads and parks, agreeing to maintain these and police the premises, and then leased the property back to the University for 999 years in consideration of one dollar, the University planting and maintaining the grounds.

In this great "tree museum" the arrangement of specimens is in regular botanical sequence, following the accepted order of classification. It is like some big natural history museum with contents spread over 260 acres of out-of-doors. But there is no formal arrangement of specimens in set lines and spaces, like trees in a nursery. The contents are so disposed as to constitute the elements of a glorious landscape picture, wholly natural in effect while accurately maintaining a strict scientific order.

The landscape is purely sylvan—no open glades, grassy meadows and pastoral fields, as in other parks: the whole area is nearly all filled in with trees and their undergrowth, and the smooth pleasure-ways wind in and out as through a natural woodland. The trees are mostly in their very early youth, but, planted under ideal conditions—rejoicing in an abundance of good rich loam filling the capacious pits carefully made for each—they have already reached a surprising growth—some of the species in groups and others apart as individuals, thus fully illustrating their habits. In their young vigor all have a look of flourishing content, as in a veritable tree paradise. Every tree or shrub that can live in the climate of Eastern Massachusetts is here cultivated, in illustration of the sylvan flora of North America from Hudson's Bay to the latitude of Virginia and east of the Rocky Mountains. The casual visitor sees only a very beautiful landscape growing up with fine young trees, but the botanist detects the orderly arrangement. It is a sight the equal of which no other part of the world can show. The temperate climates of the earth pay tribute to this spot, and much is doubtless yet to come from various lands as yet comparatively little known and from unexplored regi
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ordinarily beautiful creeping rose covering the ground, its dense, fine and glossy foliage largely hidden by wonderful sprays of single white blossoms with golden hearts, deliciously fragrant, matting the surface in creamy masses or clambering against rocks and ledges like sea-waves breaking on a precipitous shore. This is the Rosa Wichuriana. For some time it was peculiar to Franklin Park, a striking feature of the scenery. But a thing so beautiful was destined to corresponding popularity, and now it is a favorite all over the country. This is an acquisition from the Arnold Arboretum. Brought from Japan as an obscure wild rose, it was noted in the Arboretum collections and tested at Franklin Park with the result of becoming one of the splendid floral acquisitions of recent times. That other great favorite among single roses, the Rosa Multiflora, was also introduced by the Arboretum from Japan. The list might be greatly extended.

In these days the Arnold Arboretum has become the central exchange of this continent for trees and woody plants. It serves as an experiment station for all the park systems of the country, famed among park superintendents, gardeners of gentlemen's estates, landscape architects, and nurserymen throughout the United States.

Valuable results from newly introduced species and varieties of fruits, and from work with trees, are obtained in the Arboretum work. For instance, a variety of hardy peach was raised from seed obtained from Northern China, thus making practicable the cultivation of that delicious fruit through a much more northerly range in New England and other parts of this country than had been possible. Moreover, the gardener of the Arboretum, Mr. Jackson Dawson, has made this peach the base of several new varieties with all the hardiness of the parent and greatly superior in the quality of its fruit.

Mr. Dawson is one of the world's great gardeners. His achievements in horticulture are almost wizard-like. He is reputed in his calling to have the "magic touch" that imparts sure and successful growth to whatever comes to his hand—seed, cutting, plantlet, or sapling. This means, of course, a natural aptitude for his work, combined with knowledge of exactly what to do in given cases—the necessary conditions of soil, light, temperature, cultivation, and so on. His activities at the Arboretum have an international reputation. The greatest house of nurserymen and seedmen in France, for example, the Vilmorins of Paris, have connections that bring to them quantities of new specimens from distant parts of the world. They invariably send one-half of all the new tree seeds they get to the Arboretum for trial by Mr. Dawson, confident that he will succeed where others might fail.

In a corner of the grounds stand the greenhouses that are the centre of Mr. Dawson's energies. Here every new tree that begins for the Arboretum a career of perhaps centuries of life takes the first of five successive steps: Planted as a seed in a tiny pot, when sufficiently developed it is moved to a larger flower-pot, usually as a graft on a hardy stock of the same or an allied variety; next it passes the winter in a "cold pit" protected from frost; then it goes to the nursery to receive a training through its early youth, sheltered from climatic vicissitudes until fitted for adult independence, when it takes its place of more or less permanence in the grounds amidst a numerous group of its kind—a group destined to be thinned out until a clump of eight or a dozen individuals are left to live through their natural life under ideal tree conditions—the typical individual of the species standing apart by itself at least 100 feet away from its sociable fellows, to develop its nature in perfect freedom and show what a tree can do at its very best. Every specimen is systematically numbered and labeled, with reference both to its place on the detail plan of the grounds, and in the great card catalogue that comprises, in about 10,000 records, the full life history of every specimen ever planted.

Only the natural species are selected, as a rule, for permanent growth in the collections. Little attention is given to hybrids. Cultivated fruit trees are not represented; the apples, for instance, are often little larger than huckleberries and are tasteless, puckery things. So it is a pet joke of Mr. Dawson's to offer visitors the identical variety with which Eve tempted Adam. The original species of various other fruits, such as pears, plums and peaches, are here seen to be correspondingly inferior to their cultured progeny.

In addition to the greenhouses where detailed experiments are constantly being made there is a modest brick building standing near a main

THE AZALEA WALK

VIEW FROM BUSSEY HILL

entrance, containing the museum, the library and the laboratory of the institution. The museum is on the first floor. Here are displayed specimens of the wood of every tree that grows in North America, as collected by the director in his explorations. Each specimen shows the looks of its wood both rough and smooth, cut with the grain and across it, and how it appears polished and plain. These facts give an idea of structural or ornamental uses. Every specimen also has its records: specific gravity, chemical constituents, amount of ash to a given weight, and heat units developed in combustion—facts of high economic value. It is curious to see how some of the most rapid-growing woods are densest, closest of grain, and heaviest, the tree's forces industriously accumulating its substance from the atmosphere with marvelously rapid energy. The library contains the best existing collection of works relating to trees, and is the gift of Professor Sargent to the institution. The herbarium of woody plants covers both the temperate and tropical zones, and is very important.

AMONG THE SPRUCES

Let us glance at some of the activities that have proceeded from this centre. Professor Sargent is a man of large and dominant personality; an authority in his science. When Boston set out with the beginnings of a system of public parks about twenty-five years ago, he urged that Mr. Frederick Law Olmsted be consulted for its designing. In consequence that master of landscape art became Professor Sargent's near neighbor at Brookline, and the Boston Park System developed into the greatest and finest in the world. The Arboretum itself took shape as one of its most excellent fruits. But the effects of this step were far more than local. Out of this association with Mr. Olmsted came the great

SPECIES OF FIR TREES

movements that resulted in the preservation of the scenery of Niagara Falls by the State of New York, followed by the reservation of the Adirondack forests. The missionary work that led to those ends was instituted and inspired from the Arnold Arboretum.

When General Francis A. Walker was given charge of the Tenth Census of the United States, he made it the best and most accurate ever taken. At the suggestion of Professor Sargent he made one of its leading features a study of the forests and forestry resources of the United States, and the director of the Arboretum himself was entrusted with the work. Professor Sargent and his assistants visited every part of the country, explored remote and trackless regions, and obtained information of immense

FROM THE AZALEA WALK

A WOODED GLEN

THE MEADOW NORTH OF HEMLOCK HILL

GOLDSMITH BROOK

public service. Great sections of the country were then first made alive to the value of their forest possessions. The vast forests of the Southern States, for instance, had remained practically unknown, and that part of the Union found itself in possession of riches that had been but faintly suspected. An enormous development and exploitation of forest wealth followed, adding millions and millions to the available assets of the American people, and emphasizing the fact that the annual crop derived in various ways from the forests of the United States takes precedence of every other crop in extent and value.

The Arnold Arboretum was then in its infancy, and all this great forestry investigation of the Tenth Census was conducted there. In this report was laid the foundation for all subsequent study of the forests of North America,

BETWEEN ROSE AND HEMLOCK HILLS

IN EARLY SPRING
Fothergilla and Judas Tree in flower

and for the policies of intelligent forestry management now in course of development.

SOUTH STREET ENTRANCE

Besides this immediately practical labor a great amount of important literary work has been conducted at the Arboretum, to the permanent enrichment of botanical science. Here Professor Sargent has prepared his twelve great volumes, "The Silva of North America," a magnificent quarto publication illustrated by 628 plates. Twenty-five years ago there was but a fragmentary knowledge of the trees of North America, and the information was mostly beyond the reach of students. Even botanists were entirely ignorant concerning many of our trees, and about many other species only the vaguest and most unsatisfactory information was obtainable Now,

WEST FROM THE ARBOR-WAY

thanks to the work done at the Arnold Arboretum, the trees of no other continent have been so thoroughly studied or are so well known. In the "Silva of North America" stands the record of this remarkable scientific progress. Another important work carried out at the Arboretum was Professor Sargent's "Forest Flora of Japan." It is a complete record of the trees of that country, the fruit of investigations by Professor Sargent in all

NEAR FOREST HILLS ENTRANCE

parts of the Island Empire. His Arboretum work also includes many reports on forestry, forest trees and related subjects, and he also edited for ten years a valuable weekly periodical, "Garden and Forest."

Beside the great services to the national Government and in connection with Niagara Falls and the Adirondacks, the director of the Arboretum has acted in important advisory capacities in relation to the parks of New York City and in organizing the important Botanical Garden for Bronx Park; and but for his influence, exerted in manifold

THROUGH THE SHRUBS

ways, the park system of Boston could never have taken its present unrivaled shape. Largely by his counsels its development has been undertaken. As director of one of the leading institutions of the park system he has tacitly acted as an advisor for the park commission in the shaping of its general policy. The remarkable Massachusetts movement for landscape development and the preservation of natural scenery has had in him one of its main sources of inspiration, and the measures

THE ARBORETUM FROM BUSSEY HILL

that have added numerous and extensive play-grounds to the public domain in and about Boston found him one of their heartiest advocates.

The great work of railway station adornment, described in THE WORLD'S WORK for March, had its source at the Arboretum. Professor Sargent was a director in the Boston & Albany Railroad. One day Mr. Edwin B. Haskell, the editor of the *Boston Herald*, expressed to him his desire to see the new Auburndale station, about to be built near his own home in Newton, made thoroughly artistic. Professor Sargent took hold of the matter in earnest; he interested his two famous neighbors in Brookline—Mr. H. H. Richardson, the great architect, and Mr. Frederick Law Olmsted—in the project; and in that charming example of a rural railway station—the first of the renowned Boston & Albany series in which the two eminent artists coöperated—was the beginning of the national movement. The beauty of these railway-station plantations, marked with an exquisite simplicity in their harmoniously grouped masses of shrub-

CHINESE APPLES

THE HEMLOCKS

bery, is due to the influence of the Arboretum.

Materials, too, have been brought within reach of the public. Before the Arboretum was started it was difficult to obtain American shrubs for horticultural purposes without sending to Europe. But that institution has taught our gardeners, our wealthy amateurs, and the public at large the great value of our native growths, and how for beauty and climatic suitability they are best adapted to local conditions. Today there is hardly a park in the country that does not bear witness to the influence of the Arnold Arboretum.

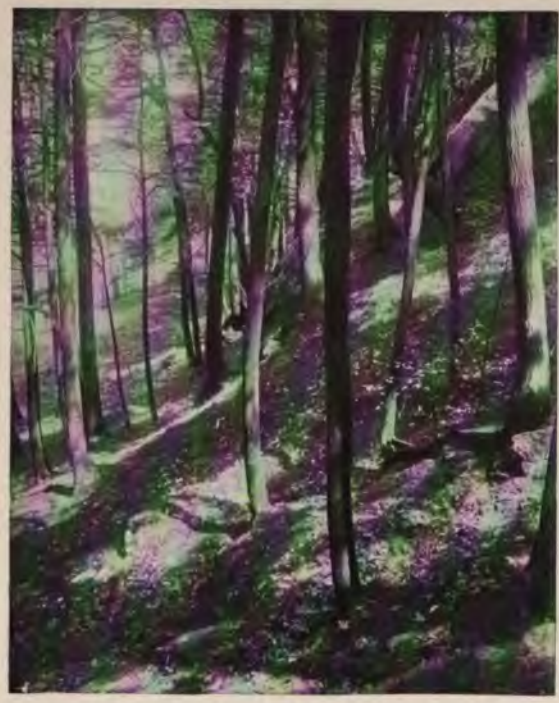
The services of this great institution stand freely at the disposition of everybody. Any one who chooses may avail himself of the results of its investigations and make practical use of its new introductions from other parts of the world. Economic horticulture and timber culture are thus obtaining immense benefits.

This important work has been carried on at a singularly small cost. The city of Boston has spent over half a million dollars in fulfilling its contract with Harvard University—a contract that insures the existence of the Arboretum, both as a scientific institution and as a public pleasure-ground for at least a thousand years, and guards the University against any temptation to realize on its land value, which already is estimated at over two million dollars. The museum building and the unsurpassed herbarium were given by Mr. H. H. Hunnewell, but the original fund, increased to one hundred and fifty thousand dollars by the accumulation of interest, has remained the sole endowment. Such results would have been impossible had not the director by good fortune possessed the means that enabled him to devote himself unreservedly and unselfishly to the work.

The Arboretum is national in its usefulness and scope. With a broader endowment its usefulness to the whole world could be widely increased, and the scientific name of America greatly broadened.

There is an endless need of work which the Arboretum better than any other establishment can now do. What it has done in making known to the world the trees of North America it might, if properly endowed,

JAPANESE CHERRY



THE SIDE OF HEMLOCK HILL

do for the trees of Mexico. The forests of Cuba are hardly explored, although they are known to abound in numbers of valuable timber and ornamental trees. In the Philippines there are believed to be more species of trees than in all of North America. Who can tell what riches a systematic study of the Philippine silva might disclose? Western and Northern China is a field of great promise, for those mountainous and little known parts of the empire are believed to contain more useful and beautiful trees than any other portion of the world. Here is now the best field for botanical exploration and discovery. This field is one of special interest to us in America, for the climate of China is very similar to that of our eastern states, and the exploration of the Chinese silva by the Arboretum might be expected to result in the introduction of great numbers of useful and ornamental trees and shrubs into our gardens.

Equipment for the systematic study of the diseases of trees should be added to the Arboretum, and such a study might well save millions to the national wealth. The Arboretum is only in its infancy. If it is to grow, and if all the promises of its future are to be realized, it must receive, as it deserves, help from all parts of the country.

POOL WITH WATER LILIES

A SUCCESSFUL PRINTING TELEGRAPH

A REMARKABLE NEW INVENTION WHICH IS PROVING TO BE PRACTICABLE — ITS MECHANISM AND THE ACHIEVEMENTS IT MAKES POSSIBLE — A NATURALIZED INSTRUMENT AND ITS INVENTOR

BY

MAXIMILIAN FOSTER

A NEW telegraph machine, known as the Murray Page-Printing Telegraph machine, has been invented that succeeds in a field where a hundred others have lamentably failed. Its operation materially reduces the cost of transmitting telegraph despatches, yet it has been necessary to bring this invention half around the world to obtain for it the recognition it deserves.

The inventor, Mr. Donald Murray, is an Australian journalist. He is a young man, a good bit this side of the prime of life, and with all the ingenuity of youth. A few years ago he became impressed during the ordinary routine of his work with the inadequacy of the ordinary telegraph instrument. So he set forth to investigate a field that others had investigated with little success. As a result of his investigations he has produced a machine that is almost startling in what it can do.

Mr. Murray's machine was looked upon in Australia as an ingenious thing that might, perhaps, pay for its keep. But beyond that it gained no favor.

"Australia is not quite up to the States," Mr. Murray gently explains. "You see, out there they are about in the same position now that America was fifty years ago."

Mr. Murray observed that Australia didn't care for the Page-Printing Telegraph. So he packed up his machine and came to America. But even here things in trade move slowly. It was two years from the time he first developed his idea before it was commercially accepted. Today it works in the New York offices of the Postal Telegraph; a few years, perhaps, will find it clattering in every main line office on two continents.

Before going into detail concerning the machine, one of its practical features must be set forth. Its great commercial advantages do not lie so much in its saving of labor as in its enormous saving of wire. A single copper line between New York and Chicago costs $60,000 to construct. The Murray invention makes such a line equal to two or three lines.

Simply described, the Page-Printing Telegraph is an instrument—or rather a train of instruments—that automatically receives

SENDING THE MESSAGE

upon a typewriter telegrams despatched over a single wire. In its operation it is both mechanical and electrical, and of such construction and simple method that it may be worked by persons of limited experience.

Since the general installation of telegraphy there have been innumerable efforts to perfect a machine of this character. Yet with all the talent and energy devoted to this end, few have succeeded in attaining even a mild commercial success. The simplest form—the familiar "ticker" of the stock-broker's office—serves its purpose, but its capacity is limited. It is questionable, however, whether its use in ordinary telegraphy over more than short distances has ever paid. Another form of the "ticker" machine prints in lines along a full page, instead of a tape, but this, too, has had little success. Then there is still another instrument—a European invention—capable of the extreme speed of a thousand words a minute—when it works. But this invention is apparently too highly developed, at least it has not commended itself to American capital so far.

In the Murray system are four main instruments for transmitting and receiving despatches—that is, two in each station—all of which are shown in the accompanying diagrams. The first is the transmitting perforator; the second, a modified automatic Wheatstone transmitter. This completes the instruments in the despatching office. In the receiving office the main instruments consist of a receiving perforator and the automatic typewriting attachment.

The characteristic principle of the Murray system is the use of a perforated tape accurately marked along its length in half-inch spaces, each space containing room for one Roman character. The tape is merely run through a machine attached to a typewriter, and the message appears printed.

Upon receiving a message for transmittal the operator sits in front of the transmitting perforator. In appearance the instrument is not unlike the usual typewriter, though much more compact. It writes, all told, eighty-four characters, and on the transmitting and receiving tapes these appear as small circular perforations. In each half-inch division marked upon the tape one letter or numeral is dotted, and it is the arrangement of these dots, their position and the spaces between that determine the letter or numeral.

Both tapes are marked by a central line of smaller, even perforations. These engage in the toothed feed-wheels of the instruments, and insure for the tape a steady, constant flow. That is their only use.

Imagine that the operator has stamped out the message on the tape. The next detail is to place it between the toothed wheels of a modified Wheatstone transmitter. The upper wheel of this gearing is the exact width of the tape; the lower is a spur-wheel whose teeth engage in the central line of perforations. The function of the spur-wheel, which is driven at a constant speed, is to feed the prepared tape through the transmitter in a steady flow.

At each side of the spur-wheel two little rods reach upward till their tops press against the tape. A gentle spring holds them there. When the motor in the transmitter is started the tape feeds along over the spur-wheel, and the little rods, each time a perforation comes along, push upward through the holes. After entering the perforation these rods—prickers they are called—are at once withdrawn, and by their up-and-down motion—vertical oscillations—make and break an electric circuit.

This vertical oscillation sets up a series of impulses in the main wire, like the beats of a pulse. Only the impulses are not regular; they are nearer or wider apart, corresponding to the spacing of the perforation in the tape, which allows the two prickers to open and close the circuit. To use the inventor's expression, they correspond in frequency and sequence to the perforations in the transmitting ribbon.

The message-tape, having passed through the modified Wheatstone transmitter, what happens? This: the live wire—the main line—becomes actuated by a series of impulses. Signals pass from the transmitting to the receiving station. But for various reasons the main-line current impulses are not used to work directly upon the instruments in the receiving station. Instead, there is a local circuit, entirely unconnected, electrically, with the main line. On the local line are, in the following order, a punching relay, a governing relay, a vibrator, a receiving perforator and the automatic typewriting machine.

The action of the receiving perforator is almost similar to that of the transmitting perforator, with the exception that the transmitting instrument is worked by hand, by the

MR. MURRAY AND THE PAGE-PRINTING TELEGRAPH

SHOWING BOTH THE SENDING AND RECEIVING INSTRUMENTS

fingers of the operator, while the receiving perforator is actuated by electrical energy.

Thus: the impulses from the main wire are transformed into the local receiving circuit. Over the toothed feed-wheel of the perforator the paper-tape is fed. An impulse arrives — *dot-dot* — goes the perforator, the punching magnet is vitalized, and a series of holes are punched in the tape. Then the spacing magnet draws the tape along until the next character space is in position, when again the punch dots another series of holes. This action is uniform and automatic, and the only attention necessary is to see that the tape is renewed at proper intervals.

The transformation of the message from the punctured tape to a commercial form, ready for delivery, is wholly mechanical. Anyone capable of working a typewriter can perform the task.

The typewriter operating device consists of five longitudinally reciprocating bars or "combs," presenting five pointed terminals to a perforated die-plate. The idea is something like that of the ordinary music box with a "comb" and a toothed drum. When a certain series of drum-teeth in the music box engage a certain series of teeth in the comb a certain tone is produced. Keep that in mind. At right angles to the reciprocating bars are laid on edge thin metal strips. Each of these metal strips is held against the toothed bars by a spring, and each strip is fastened to a typewriter key. The perforated tape is fed into the typewriter operating machine across the perforated die-plate. There are five holes in the plate, and pointing toward these holes are five points, terminals of the bars. As the operator turns the hand motor which runs this machine the five bars press against the tape. The inclination of each bar is to push its point into the small hole facing it in the die-plate. Where there is a hole in the tape—a perforation—there is nothing to obstruct this. But where unperforated paper interposes the bar cannot move. In this way the five bars form into many different positions as regard each other.

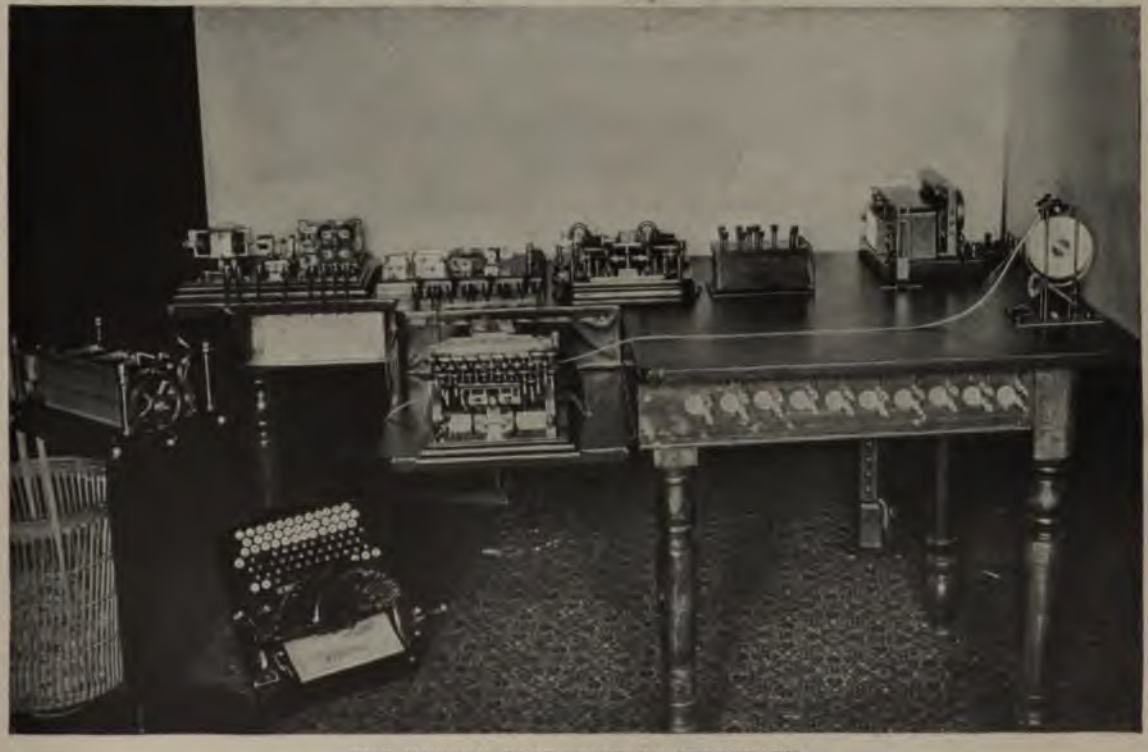
Each time the bars push against the tape they form a certain combination that at one point along their length leaves a groove between their teeth exactly under one of the metal strips attached to a key. Instantly this strip is forced down into the groove by its spring, when a cam, driven round by the hand motor, hooks into it, gives it a sharp twitch, and thus pulls down on the typewriter key. This drives up the type key against the paper, and the numeral or character is printed. Then the metal strip is drawn back into place, the tape is moved along into the next half-inch space, when the same operation is repeated.

It is necessary to see this new invention at work to appreciate its almost human character. The transmitting and receiving of the tape superficially seem interesting, but not altogether extraordinary. But if one gets closer and observes the living deftness with which it performs its work, there is a different view of the situation. But the working of the typewriter, which makes visible instantly the perfection and ingenuity of the invention, is at once startling, not to say uncanny.

The speed of the Page-Printing Telegraph is astonishing. Under the most advantageous conditions a skilled telegraph operator using the Morse key is able to send on an average about twenty-five words a minute. The Page-Printing Telegraph, under the same conditions, transmits and receives one hundred and thirty during the same interval. Between New York and Chicago, a speed of 102 words a minute has been sustained; on a line 384 miles long the instrument acquired a speed of 124 words a minute. This is double the speed of the average typewriter.

Working the Morse quadruplex system, it is considered a notable achievement for eight men—four at each end of the wire—to send eighty words a minute. By the Murray system it is possible to transmit more than two hundred and forty words in the same length of time.

The fact that the perforators manufacture punctured tape faster than the typewriter can translate it does not mean that the translation of the message is delayed. Sections of tape of any length may be torn from the roll at any point where there is a space between words, and in this way two or more writing machines may be used to translate the tape from one perforator.



THE MURRAY PAGE-PRINTING TELEGRAPH

The automatic receiving and writing instrument in the centre, the sender on the floor

EMERSON McMILLIN IN HIS LIBRARY

By the chance arrangement of light the reflection of the face in the glass-doors of the book cases—almost a bronze in effect—was caught by the camera

A LEADER OF MODERN INDUSTRY

EMERSON McMILLIN, THE HEAD OF ONE OF THE LARGEST COMBINATIONS OF GAS, ELECTRIC LIGHTING AND TRACTION COMPANIES IN THE WORLD

BY

ARTHUR GOODRICH

HE was just an ordinary fifteen-year-old boy of the Hanging Rock Iron district. Until he was ten he had gone to school the usual three months in a year, but by that time he was big and strong and able to earn something toward the big family's little income. His father did manager's work in the iron works for $1.25 a day, and the boy was the twelfth of fourteen children. So he graduated from school into the iron works at ten. But the boy was looked up to and liked by everyone—respected because he had thrown every wrestler of that and adjoining counties and could lift six hundred pounds at a test, and liked because he was always in a good humor, energetic and well mannered. He had worked about the furnaces for two years, and at twelve was running an engine. Then he had tried charcoal-making and had cut cord-wood day after day for a small compensation. And it was this work with pick and shovel and wood-axe that had made him the healthy, broad-shouldered, big-muscled boy that he was. He was a child of the great outdoors.

Already political talk was in the air—talk which ended in Lincoln's election and the Civil War. The family was of Scotch stock and had settled originally in Virginia, where the elder McMillin had become a thorough Southerner in his sympathies. It was a sad day, therefore, in the little Ohio cabin, when the boy announced that he was a Republican—a black Republican, as they called it then. Why he, next to the youngest boy of the family, alone had read some of the Lincoln-Douglass debates and had caught a glimpse of the other side of the question, is hard to say. He has been doing that sort of thing all his life. The other children were cautioned to say nothing of it outside of the house. It was considered a family disgrace. But as time went on and rumors grew into events, there was a change. The father did not believe in civil war, and the side which began the conflict lost his allegiance. The day after the firing on Sumter there was no more enthusiastic Union man in Ohio. He did duty in a border service company while four of the boys enlisted immediately and two more later. The boy himself was rejected as too young when the first company he joined was mustered in. He was but barely seventeen. But he was not to be denied. Like many another, he aged a year in a day and enlisted in the 18th Ohio. At the end of three months the regiment was reorganized as Virginia cavalry—the Ohio quota being full—and became later the 2d West Virginia. The family of fighters became known as the "fighting McMillins;" three were killed or died from wounds; the boy himself was wounded five times and served in thirty-eight battles. Only a few weeks after his enlistment he was nearly run over by a train near Clarksburg while on guard at a bridge. Once after a skirmish in Sinking Creek Valley, in which he was wounded, he was overcome with weakness and fatigue and cold on the ride back over Bald Mountain. A delayed officer, attracted by the whinny of the boy's horse, found him beside a log where he had dropped, and brought him out of certain death. Toward the end of the war, when, one day, he was, as lieutenant, officer of the day, he stopped a mutinous mob of several thousand with twelve picked men.

When the regiment reorganized as cavalry he was offered a commission. He did not hesitate a moment to say:

"No. There are older and better men."

Later he refused a lieutenant's commission in a Negro regiment. Again he was made a lieutenant, but a new colonel side-tracked the commission, and finally in the last year of the war he became a commissioned officer.

One winter in camp in the Kanawha Valley

the boy got possession of a book called "Language Taught Without a Teacher." The men about him, playing cards by the camp-fire, jeered at him as he ground out the elements of French, but that didn't bother the boy. He acquired some French books and found a Frenchman in the camp who helped him on pronunciation. The next Spring his company was caught in rebel territory. There seemed no way out of the encircling enemy, when a young girl in the hearing of rebel sympathizers told the boy in French of a bridge which would be destroyed in a few minutes and which was the last avenue of escape. The company moved instantly, first as if directly into the rebel ambush, then, as soon as they were out of sight, at a run toward the bridge. Five minutes after they had crossed the bridge into safety it was blown up. It was the same boy who read the Lincoln-Douglass debates at home and the French primer by the camp-fire.

After the grand review at Washington, where the division to which he belonged held the place of honor, the boy went back to Ohio. He had some money, saved from pay and bounties. He tried country storekeeping and failed. He tried to sell goods—carried a bag of shoe samples from town to town. At the end of three weeks he hadn't sold a shoe. In despair he went into a store in Athens. Back by the window, with his feet comfortably rested on the counter, sat a man, tilting back in his chair and reading a newspaper. The young man ventured to inform him that he had some shoes to sell, and was told gruffly that none were needed. Whereupon the young man unstrapped his bag and laid out his samples on the counter in as tempting a fashion as he could. When they were all ready, the man, who had been eyeing him from behind the paper, straightened out and remarked:

"Young man, pack up them shoes and get out of here."

The young man lost interest in selling shoes and went home. Next he tried the coal business for a while and with little success. He heard that a small gas works was being built at Ironton and went back to his earlier tools, pick and shovel, on the Ironton streets. That was the beginning. The young man became interested in chemistry, especially the chemistry of gas. At the completion of the little works, he became its superintendent. He devised a method of purifying gas by passing it through sand and filings. He was popular and became a member of the common council.

Many men would have been satisfied with such local progress. He had learned the business of the little Ironton plant thoroughly. He wished to know more. He fitted up a little laboratory, and in every spare minute during the day and far into the night he worked at the science of his new business. Never was an hour thrown away. If it was not the routine of the works, it was with test tubes in the laboratory or with hammer, studying geology in the country about Ironton, or writing little articles for a friend's paper. In everything that meant perfecting his personal equipment he was enthusiastically interested. He wrote an essay on the Natural Resources of Lawrence County for a prize in the annual *Eisteddfod*, or town contest. He didn't win the prize, but that didn't matter. It was practice.

So thorough were his geological investigations that once when a discussion was on—about the strata of a certain district—between Dr. Orton, the State geologist, and General Warner, who was in Congress at the time, the young superintendent settled the point in question. He revised the original geological survey of the State in one section. It was he, too, who first discovered what the real stone formations were in the Finley Gas Fields. Yet he studied geology from books but little until he was asked to make a report on the geological strata of a district, and he had never had a theodolite in his hand until he was asked to take charge of an engineering corps to survey a railroad. It was not all observation, however, for he read many hours daily. He became in quick succession general manager of the Lawrence Iron Works, of the Crescent Iron Company, and general manager of the New York and Ohio Steel Company, without, however, abandoning the gas management. But his digression into the iron business failed to improve his finances.

But because of the work he had done, by contributions to leading trade journals and by clear-cut speeches before gas and other engineering associations he had become known, and he was offered in 1883 the general management of the Columbus Gas Company. He found that chronic intemperance was hurting the works, and immediately

made a rule that any workman who touched liquor during working hours would have to go. A few went and then the drinking stopped. The men could not be kept continuously at work in the summer, and the superintendent was kept busy getting substitutes. Mr. McMillin offered each man a bonus for continuous service. If a man was regular for ninety days he received $10 besides his pay. If at the end of a year he had been entirely regular an additional $25 was given, making a total of $65. The change was immediate.

He believed in labor sharing profits with capital, and an early system was tried by which one half of the percentage saved in the cost of the product was added to the worker's salary. The new method, which has been devised to meet present conditions, is to pay the satisfactory workmen a yearly percentage dividend in proportion to salary equal to that paid to stockholders. To the end that the employees may become stockholders, the company pays the dividend in stock until the workman owns three shares. After that cash dividends are paid.

At Columbus, too, a laboratory was built, and he continued his studies. Gas was lowered in price and brought larger profits under his hand. He had time for everything which he felt could add to his culture and capacity for work. He had a passion to know why and how and where everything was, to get at the bottom of everything, to know it from the bottom up, and then to turn it into practical use. Two intimate friends, who tried for a number of years to catch him on test questions, gave it up finally and called him "an encyclopædia of universal knowledge"—this of a man who left school for manual labor when he was ten. He became so interested in ancient history that he made a chart in colors, showing the rise and fall of empires, to prove the saying "Westward the star of empire takes its way." He had always loved birds and read Audubon with all the eagerness of a schoolboy. And all the while he was carrying on his scientific investigations, doing the routine of his business, making and holding strong friends and entering upon a large financial career. The first experiment was made at Sioux City. The gas-works there were bought up, improved and sold out at a good profit. Other trials followed. He watched and studied the banking business, and gradually began directing investment in Columbus away from real estate into stocks and bonds and securities of all sorts. He became president of the gas company, and in 1888, in conjunction with other capital, bought it outright. The directors offered him a material increase in salary as president if he would sign a contract for five years.

"Not for one day," was his answer.

It was not long after that he was offered $18,000 a year to become the president of the united St. Louis Gas Companies. This was his first appearance in the open as a financier upon a large scale. Representing first English and then New York and St. Louis capital, he had tried to lease one of the four competing companies in St. Louis. At first acquiescent, they had flatly refused.

"All right," said Mr. McMillin, "we'll try the ——— Company and be your competitor."

Of the four companies then in operation one was a "raider," selling gas at $1.00 per thousand feet and losing money; one was selling at $1.50; another, the largest, at $1.60 and still another at $2.50. The capital represented by Mr. McMillin finally bought out all four companies and reorganized as the Laclede Gas Company. Shortly after the reorganization a friend, who owned $300,000 in stock, came to Mr. McMillin. His stock was actually worth about $50,000 at the time, and no one had great faith in the success of the new company.

"I want you to advise me," he said, "when I shall sell out my stock."

"Pretty hard to guess into the future," was the answer. "Ten or fifteen years on a venture."

"Nonsense! Your interest charges are $500,000. You can't pay those within $190,000."

"Well," was the reply, "you asked my advice. I should say, hold it."

And he did. The Laclede Gas Company is earning a million a year now, and is selling gas at an average of ninety cents per thousand.

But the struggle at St. Louis was not entirely a financial one. Political corruption had to be met and beaten. The old companies had always silenced the council by "inducements." Mr. McMillin was not that type of man. As soon as the corrupt part of the city council learned that the head of the new gas company was not to be persuaded they tried numerous methods to force him

into line with the old way of doing things. A city gas works was proposed and given up. A scheme of putting the new company out of business by passing a bill requiring an arbitrary and ruinously low rate was thought of. A bill was brought up, setting a rate of ninety cents for the new company. On the eve of its passing a member of the council who was in the scheme came to Mr. McMillin and offered to kill the bill for a large sum of money. He was laughed at for his pains. He lowered the figure gradually until it was one-tenth the original amount. Mr. McMillin had grown tired.

"Good afternoon, sir," he said, and turned to his desk.

The man stood behind him for a moment. Then he said in a burst of anger:

"Mr. McMillin, this will cost you $25,000."

"All right, sir. Good afternoon."

The man guessed well. The bill was passed, was fought by the company, and was beaten, but the lawyer's fees were $28,500. The firm stand of the company, its frank honesty, its costly fight, however, so solidified it in the public mind that its securities advanced immediately nearly $1,500,000 in value as a result.

But, if he was stern in his dealings with the political combines who wished "deadhead" gas, he was kindly where there was need. Representatives of a large charitable institution which had never paid for gas supply came to him about the new rule.

"I'm sorry," he said, when he had heard them through. "I can't break my rule, but —how much does your bill amount to?"

They told him, and he sat down and wrote them his personal check for the amount.

Throughout the struggle of putting the company on a solid financial basis, the arrangements of the plants, the introduction of his own ideas in the practical running of the works, the hard fight against "boodle," Mr. McMillin controlled all with the finesse of the practised financier, the practical knowledge of the man who had learned the gas business from the pick and shovel up to its most complex scientific problems, and the diplomacy of the life-long politician. He was at his desk early and late, genial wherever it was possible, grimly firm when it was necessary, direct and honest always. A man who had been one of the opposition called on him one day. They talked for a while in his private office, and when his visitor left, Mr. McMillin had no stronger backer. The newspapers, doubtful at first, were won over by his frank speech. He helped the reporters to many a good item of news. Not a word that he said could be found fault with. He was always judicious, but always sincere. One day a St. Louis paper published an alleged interview with him in which he was made to say all manner of bad things about the city government. As a matter of fact, he had never seen the reporter. The council through an investigating committee called him to account for what he had not said. They quoted parts of the interview. He met them with a calm

"How do you know I said that?"

When asked if he had made the remarks in question, he would neither deny nor affirm. The council was not used to being checkmated so easily and firmly. After some hours of fruitless questioning, he was told that he must answer by two o'clock or go to jail.

"I wouldn't pretend to know your business," he said, in reply. "But I may say that you will learn no more at two o'clock than you know now. And as for jail—doing that sort of thing cost the sergeant-at-arms of the United States Senate $100,000 a few years ago."

After they had adjourned, the leaders of the council talked the matter over with the city councillor. The entire discussion was flatly dropped.

How long the struggle with the council would have lasted is hard to say, if rather strenuous means had not been adopted. Mr. McMillin hired a number of detectives to look into old dealings of the council, and many flagrant cases were unearthed. When he was in full possession of the necessary facts, he let the people know indirectly what had been done. The fight dwindled into perfect peace, and, because the laws of Missouri have it that a man who gives a bribe is more of a criminal than the man who takes it, many influential citizens were unduly worried.

Two years after the beginning of the St. Louis operations Emerson McMillin & Co. opened offices on Wall Street for general banking business. Gradually they have taken possession of many of the important gas, electric and street railway companies throughout the country. Some have been developed, just as the Sioux City Company had been, and sold. Others have been kept, and these

form the nucleus of the American Light and Traction Company, with an authorized capital of forty millions—which, it is said, will be quickly enlarged. Mr. McMillin is the company's president. He has been president of over sixty corporations. Millions upon millions of dollar's worth of properties have passed through his hands. And he is only fifty-seven years old and is at the summit of his powers. There are larger achievements yet to come.

When he and his associates acquired the East River Gas Company in 1892, he decided to construct a tunnel beneath the East River between Long Island City and New York. Engineers said it was impossible and brought up the old North River tunnel begun twenty-five years ago and still incomplete to prove their assertion. Mr. McMillin decided that it could be done, and he personally watched each move in its construction, advising and suggesting. When it was completed, against the counsel of friends and practical engineers, he was the first man to go through the tunnel from end to end. The tunnel was a triumphant success, and the East River Company is one of the most important corporations in New York.

After all, it is only the simple evolution of boy to man. He has handled the pick and shovel and axe, the musket and sword, the test tube, theodolite and pen, men and millions after the same general plan. A man who knows Mr. McMillin well wrote last year in private correspondence to friends: "'Whence hath this man these things?' Is not this the ———'s son? Was he not a common soldier? How came this unschooled, uncolleged, never idle man by all his varied knowledge?" "Eternal vigilance," and "an infinite capacity for taking pains" and even more, an infinite *desire* for taking pains: this seems to be the answer. The splendid physique which his early hardships gave him, a cool, clear head, sound common sense and a warm heart have helped him. He is a military man of business, a born fighter, watching each move of his opponents, always dead in earnest, planning with delicate skill, hard as flint in the face of opposition, deciding quickly and absolutely what not to do as well as what to do, and seeing everything, large and small, to its finish. If he makes a mistake he hammers his way through without retreat. He makes enemies and beats them. His personality grips one with a sens
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and short journey to wealth or ruin which stock gambling offers. And he does this because it is good business rather than because of anything else. He likes a game, but prefers it after hours. He is not a member of the Stock Exchange and has never been on its floor. It cannot be said of him, as of Mr. Carnegie, that he has never bought or sold a share of stock for anything except investment, but the number of times he has done so are less than a half dozen, and were usually the results of peculiar personal circumstances. For example, a certain stock was selling at 36 when one day Mr. McMillin was chatting with a number of friends in a broker's office. The talk swung around to this quotation, and all were unanimous in saying that the stock was a bad investment except Mr. McMillin.

"Why do you have faith in it?" they asked.

"I'm not sure that I know. I don't know the conditions. But that's my feeling."

"Well, if you feel that it's so good," said one, "why don't you buy some of it?"

And the others bantered him. Mr. McMillin listened for a minute. Then he turned to the broker and said:

"Buy me five hundred shares of———"

While the order was being executed the stock fell to 34, and the group of friends made merry over Mr. McMillin's "flyer."

"Sell it out at half-past two tomorrow afternoon, no matter what the price is," said Mr. McMillin to the broker, as he left them. And at half-past two the next day the stock was sold at 39½.

Mr. McMillin was sitting in his office one day when a messenger came in and asked him for a check to a broker friend of his for one thousand shares of a stock that was selling at 202.

"Some mistake. I haven't ordered any stock," said Mr. McMillin.

A few minutes later the boy returned with the same request. Mr. McMillin put on his hat and went over to his friend's office.

"What's the matter?" he said, "I don't want any of that stock."

"Yes, you do. Don't ask any questions. Sit down and write me the check."

"Oh, all right," he said, and did as he was told. A few days later his one thousand shares were sold at 305.

He looks and carries himself like a military man, iron gray hair, steady eye, firmly-hung chin, and trim, broad figure adding to the illusion which his direct commanding speech gives. At times he seems to have almost a dual personality, for even while he is talking of club matters—he is a member of thirty-eight—or of friends or business, there is a far-away yet alert look in his eyes that makes one believe that the man is following many trails, and catching the scent of many and diverse things of the future. Sometimes he is a very boy, full of whims and enthusiasms, feeling the touch and go of life. On a day's outing he will let himself loose and enjoy the play-day as thoroughly as the youngest of the party.

"I'll wager," he said on such a day to a friend, "that I can guess ——'s weight as nearly as you can, if you'll give me the benefit of your guess."

"Done," was the reply. "162."

"162," said Mr. McMillin, soberly.

And he is, has always been, utterly fearless of men or events—entirely self-confident. He has never hesitated to try anything, believing that what he did not know he would learn on the way. And he is as democratic as regards labor as he is with men. "Work not," he said once in an address to a college graduating class, "with the feeling that your occupation is beneath your ability and your social standing. No honest labor of brain or hand is beneath any man." He has been wounded in war, smashed up in railroad accidents, he has failed in business in his young days, but these things have never knocked away anything of his foundation of buoyant optimism or rubbed the smile from his face.

And that smile with the loyal, hearty spirit and the quaint sense of humor that are behind it has brought him friends that prove a remark he made not long ago: "It is not the things which money brings that give the greatest satisfaction." He is still "Mac" to the friends who watched his early struggles. One man said of him: "Emerson McMillin—Pure gold." Another said earnestly and sincerely: "If Mr. McMillin should ask me to go down into the gas trenches and shovel mud, I'd do it willingly." And he enjoys approval, just as any human man does, though his varied work fills his mind too completely to let him think about that sort of thing. He is frankly proud of the industry that has made his success. The one thing that would please

him more than anything else would be the feeling that he had been of use to some young man who is beginning the same sort of a fight that he has been through.

Mr. McMillin is not one of the self-made variety of men. He is a self-educated, self-cultured man. And his knowledge is practical, and his culture, learned from men as well as from books, is virile though fine-grained. But he openly admires anyone who knows any subject more fully than he does. Perhaps he owes something to the fact that an iron constitution allows him to work with only four or five hours sleep a night. His mastery of chemistry, begun in his little laboratory at Ironton and which has resulted in his being the greatest force in changing the gas business into a science; his geological research, which commenced in the West Virginia Mountains when he was a soldier; his studies in ancient history at Columbus; his love of birds; these are only the beginning of a long list. He is a thorough, practical student of national affairs and of economic questions. He is still a Republican, though the color has changed.

He believes in organization, of both capital and labor. "Trusts," he said not long ago, "have always existed. The claim that great organizations are smothering individual enterprises is not true. They supplant smaller corporations and not individuals; but if true, that should not be to their discredit. The railroad car-builder supplanted the individual stage-coach builder. The cut and wire nails supplanted the nail hammered out by the blacksmith. The English Parliament refused for some years to charter a gas company, because gas lighting would possibly throw out of employment two thousand men engaged in whale fishing, from which sperm oil came. We laugh at them now, and our children will laugh at arguments which are now being made against combinations." He believes—and he has proved that it is practicable by introducing it in many of his companies—that labor should participate in the profits of a business. He thinks that workingmen should be organized, and condemns the unions only in so far as they tyrannize over brother-workmen who do not see fit to join them.

He became interested in astronomy while he lay by the camp fire in war days. His interest grew with the years, and he built a handsome observatory for the Ohio State University a few years ago to perfect its astronomical equipment. The love of birds that made him read Audubon is only one side of his love of Nature. He has a lodge deep in the Maine forest, where he takes all of John Burroughs' books and, striking off into the wilderness away from sound or sight, except of the wood creatures he loves, expands and becomes boy again to the tune of the birds, the rustle of the leaves and the words of the gentle Nature-lover. A letter from the woods carries this self-explaining sentence: "I enter the forest at five o'clock tomorrow morning."

A friend called on Mr. McMillin one day some years ago and asked for Colonel Wilson, his partner.

"Have you a morning paper?" said Mr. McMillin.

"Why, what's the matter?" was the anxious query.

"Look up the art exhibitions and you'll find him. He's gone wild over pictures."

Not long after, the man who had laughed about his partner began one of the finest private art collections in the country. In his spare moments he went to exhibits, studios and sales of old paintings. One day he saw a bit of landscape. He liked and bought it. He took it home and began rubbing the dust and dirt from the frame. Suddenly he stopped short, for the name of the painter had caught his eye. It was a masterpiece of a famous artist. His collection is not a series of names, although great names are there, including Inness, many times repeated. It is *his* gallery, not a mere showy throwing together of famous works. He has chosen what he likes, and most of all he enjoys a certain picture of waving wheat fields and gets up refreshed from looking at it. It is only a month or two ago that he proposed to contribute $100,000 toward a public art gallery for Columbus, where he is president of the Gallery of Fine Arts. He enjoys few evenings more than those spent with other enthusiastic, sincere lovers of art. He loves music and hears as much of it as he can. He reads and always with a purpose. He would like to be a good public speaker, but he knows his limitations, and appears only before technical meetings where he is an authority.

While he was still a young man in Ironton

he was down at the wharves one day, when one of the river steamers landed, and a large and forlorn looking family were put off the boat because they could not pay their fare. The young fellow was interested in a moment. After seeing that they were located as comfortably as possible on the dock, he hurried to the town to get some aid for them. The first man he saw was a prominent and wealthy business man who spent some minutes in telling the young man how he admired such a generous spirit and then gave him fifty cents. He decided that it was a waste of time to repeat that kind of an experiment. He had five dollars of his own in his pocket—his total capital at the time. Without hesitating a moment he went back to the river and gave the poverty-stricken family the $5.50. Now it so happened that at the time a raffle of a painting was going on. It was the work of a local artist who was poor. The young man had bought a ticket a day or two before. That afternoon the drawing brought out his name as the lucky one, and he sold the painting on the spot for ten dollars. But the same spirit that gave the suffering family his last dollar has been doing deeds of kindness, little and great, ever since.

Early in June, 1898, there was a meeting for the organization of the Soldiers' Family Protective Association in New York. Money was needed to care for the families of some of the men who had gone to the front. Mr. McMillin made a characteristic speech.

"I'll give $1,000 a month till the war is over," he said.

He did more. He bought an old farm near Lake Mohegan in the Catskills and turned it into a home for the care of soldiers' families. The war ended and the first use for the cottage with it. There is one kind of organization that Mr. McMillin had never been entirely willing to let handle his money. That is a charity organization. He likes to know to what end his gifts are being used, to control these just as he controls his business. With that in view he has had several women constantly visiting poor people, selecting those worthy of his aid. These were the people who needed the cottage in the country. Mr. McMillin told the King's Daughters' Society to select working girls in relays for two weeks' vacations at Marion Cottage, as he called the little house after his son, Captain Marion McMillin. Every few days a little band of girls from the heart of the hot city, tired and palc, go out to Marion Cottage, and others return brown and well from their outing. Some of these girls had been told that the gentleman who did this for them was a grandfather. After that they never saw an old, white-haired man without saying: "Perhaps that is our friend." Mr. McMillin often goes up to the cottage for over a Sunday, and there, on such a visit, he met two of these girls. The head worker, who was introducing them, said:

"And this is Mary."

"Then," said Mr. McMillin, "this must be Annie." He had known the smallest troubles of these two girls for over two years. There are few things he enjoys more than to tramp the fields with his guests and answer their questions and tell them stories.

He has been the principal support of the District Nursing Association at Columbus and is reputed to have furnished this year, to the Fresh Air Fund of Columbus, money to send one thousand children into the country. Many other societies have had his aid, but most characteristic of the man are the little individual donations whose number no one but the giver will ever know. It is all done quietly in an every-day business-like way, as becomes the man. There was a talented young fellow in Columbus—considered a musical prodigy as a boy—who studied his music hard and faithfully. He had a dream of going to Germany, but it seemed impossible of realization. One day the boy's pastor came to his father and said that he had been commissioned by some one who preferred to remain unknown, to say that the young musician's expenses to and from Germany, with three years of study, would be paid. The boy went and worked hard. On his way home a trip through the Continent and England was added. The boy is a well known musician now.

Mr. McMillin is an example of the best type of manhood which our industrial progress has made, and which has made our progress—for each acts upon the other. His life calls to mind the story of the two men on a journey who came to a river which had become flooded, and had carried away the bridge. One without a word flung himself against the current and fought his way through it, while the other argued on the bank that there shouldn't have been a flood, and that the bridge should not have been carried away.

A MAKER OF NEW FRUITS AND FLOWERS

HOW LUTHER BURBANK BREEDS NEW VARIETIES OF PLANTS ON HIS CALIFORNIA FARM — AN UNTAUGHT MAN WHO WILL ATTEMPT ANY CROSS WHATEVER — HIS "PLUM-COT," A HYBRID BETWEEN A PLUM AND AN APRICOT — STONELESS PRUNES — HIS "SHASTA DAISY," A WONDERFUL LONG-BLOOMING FLOWER, FOUR INCHES IN DIAMETER, BRED FROM THE COMMON DAISY, A EUROPEAN SPECIES AND A JAPANESE VARIETY

BY

LIBERTY H. BAILEY

IN an article by myself in the July number of THE WORLD'S WORK occurred the statement that more than half the people of the United States live on farms. The "half" was an error, and fortunately, so large an error as not to mislead. Yet it is probably true that half the people are interested in farming, using the word "farming" in its broad sense to comprise the interest in plants and animals. One need not be a farmer by occupation in order to be interested in farming. Thus it comes that the work of a man like Luther Burbank appeals to an immense constituency. A new flower or fruit may interest hundreds of thousands of people. In the best sense, the making of new plants is popular.

Luther Burbank is a breeder of plants by profession, and in this business he stands almost alone in this country. He was originally of New England, where he bred the Burbank potato. He is now in middle age. For many years he has been a resident of Santa Rosa in the beautiful and fruitful Sonoma Valley, north of San Francisco. Here he has made his reputation, and California may well be proud of him. So many and so striking have been the new plants that he has given to the world, that he has been called the "wizard of horticulture." This sobriquet has prejudiced many good people against his work. Luther Burbank is not a wizard. He is an honest, straightforward, careful, inquisitive, persistent man. He believes that causes produce results. His new plants are the results of downright, earnest, long-continued effort. He earns them. He has no other magic than that of patient inquiry, abiding enthusiasm, an unprejudiced mind, and a remarkably acute judgment of the merits and capabilities of plants.

Personally, Luther Burbank is rather small and spare of stature, somewhat stoop-shouldered. He is inclined to be slow of movement, but he is very quick of perception. He is an intent listener. He is inclined not to talk of his work, but to one who has a genuine interest in his experiments he talks freely and

LUTHER BURBANK'S HOME AT SANTA ROSA

THE EXPERIMENTAL PLUM ORCHARD

frankly, but never boastfully. He likes to dwell on his failures and the delight that the quest has given him. He shows you his plants, tells you how he produced them, then allows you to make your own judgments of their merits. You feel his kindly and gentle spirit, and before you know it you love him. It is true that his place is closed to visitors, but this is because he has learned that most visitors are attracted by mere curiosity. If you are an honest and earnest inquirer, the place is yours. He tells you all. There are no secrets.

A neat little place in Santa Rosa is his home. A white picket fence incloses it. His hybrid walnuts form an attractive row in the street. The small lawn is as green as that of an eastern city. There are many good specimen plants in the yard. A handsome fan palm with vine-covered trunk is the central figure. Between clipped low hedges a straight board walk leads to the house, which is a simple vine-covered cottage as retiring and mild-mannered as the man himself. Here he resides with his aged mother. For this mother and for his plants Luther Burbank lives. At the left is a small greenhouse; and in trim rows and neat board-bordered beds are samples of many plants with which he is working.

The little place at Santa Rosa, however, has long since ceased to be Burbank's chief experimental ground. It is small, and it is not free from molestation. His chief farm is in the open farming country at Sebastopol, several miles away, on the gentle slope of a low hill. Although no one lives on the Sebastopol place, depredators are unknown. If a berry or a flower hangs through the fence, even the little children do not touch it, for they have been told that these things are Luther Burbank's.

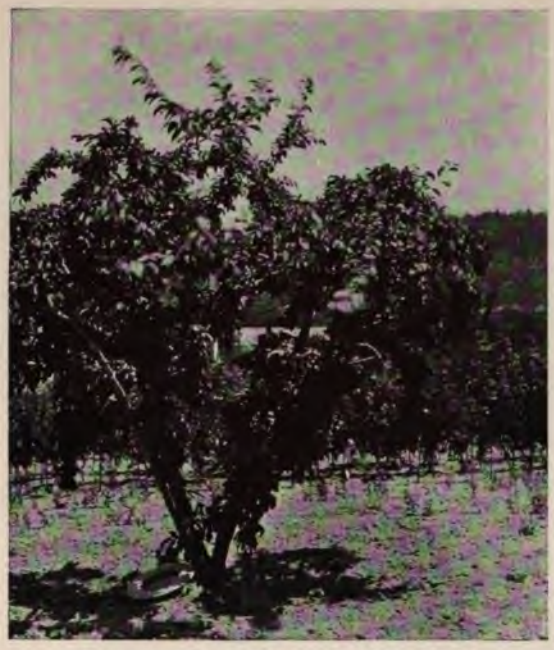
Altogether, Mr. Burbank has about fifteen acres, all of which are devoted to experimental work. Here he grows his plants, not in tens or in scores, but in hundreds and in thousands. He believes in great numbers. Thereby is there the greater chance of success. Not more than one plant in a million is worth introducing. Judged by present indications, perhaps the three most useful things that he has yet introduced are the Wickson and Burbank plums and the Shasta daisy.

There are two elements in plant-breeding—making the plant to vary, and selecting and improving the best of the variations. One of

FORTY RODS OF DAISIES
On the experimental grounds at Sebastopol

LUTHER BURBANK

On the steps of his cabin at Sebastopol



THE ORIGINAL BURBANK PLUM-TREE

the most fruitful means of making plants vary or "break" is to cross them. Thereby are their customary characters upset. In a wholesale way, Burbank crosses his plants. From an entire tree he will pick such proportion of flowers as would be likely to fall from natural causes. The remainder, numbering hundreds, he will cross. Before the flower opens he cuts off the petals. Thus the bees are not attracted, and they have no foothold. Then he applies the pollen with a free hand. This pollen is usually collected the day before from flowers that are picked and dried. All the seeds resulting from the cross are sown. Of a thousand seedlings, a dozen may be promising. These are saved, and perhaps they are crossed with some other plant. Again the seeds are sown; and thus the process continues until a desirable form is secured, or until it seems to be futile to carry the experiment farther. The judgment as to what will likely be good and what bad is the very core of plant-breeding. In this judgment

THE SHASTA DAISY
One-half natural size

Burbank excels. Not to many men is given this gift of prophecy. Burbank calls it intuition. He cannot explain it any more than another man can explain why he is a good judge of character in human beings. Long experience and close observation have directed and crystalized this faculty of his, until it is probably as unerring as such faculties can be.

Burbank loves all plants. He has worked with fruits, vegetables, flowers, grains. A strange plant in the fields at once attracts his attention and he tries to cultivate it, even though he may not know its name. His flowers and other quick-maturing things are usually grown in long, scrupulously tilled rows. Fruit trees have so long a period from seed to fruit that cions are taken from them when one or two years old, and these are grafted into the tops of bearing trees. Thereby he secures fruit sooner. In one tree there may be scores of kinds of fruit in bearing. Of most fruits he expects the graft to bear in two or three years from the seed. At the same time he may allow the original seedling to remain, thus securing two sets of the same plant with which to work. The fruit trees are planted very close in rows, and as soon as any plant proves to be worthless it is removed, and another may be planted or grafted in its place. The rows soon come to be collections of the most unrelated curiosities.

Mr. Burbank no longer makes any serious effort to keep a written record of his crosses. He remembers the parentage. In many cases he applies the pollen of two or more kinds of plants to one flower. He does not know which pollen will "take." Neither does he always remove the stamens from the crossed flowers, as we are always advised to do in order that the plant may not be self-pollinated. In practice he finds that this precaution is usually unnecessary, for the pistil is likely to refuse pollen from the same flower. When the seedlings come up, he can tell what the cross was; or if he cannot, it matters little, for he is not making his experiments primarily for the purpose of accumulating scientific records but in order to obtain definite results in new varieties. Yet, so careful and acute are his judgments that one places great confidence in his conclusions as to parentage; and many times he makes crosses with every scientific precaution. I must confess I was skeptical as to the existence of the "plum-cot," or the cross between the plum and apricot; but now that I have seen many of the tr
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ulus, apples and dozens of other groups are now receiving attention.

It is Mr. Burbank's natural desire for experiment that has led him into this novel and delightful work. Of books he has few and there are not many that could help him. Darwin's "Variation of Animals and Plants" has been his chief inspiration, and he has much of the spirit of the great master. Gray's "Lessons" and "Field, Forest and Garden Botany" have been his chief guides in technical botanical matters. He secures his livelihood from the new varieties he sells to seedsmen and nurserymen, but his experiments are so extensive and he tries so many things for the mere zest of it, that he does not make money. His real interest in his work is not pecuniary: yet he deserves well of worldly goods, and some philanthropist could render a good service to mankind if he would endow this experimental garden and allow its proprietor to devote his whole energy to research. The best fruit-growers of California prize Burbank's work and are confident that his varieties will win. In visiting his place, one feels regret that scientific record is not being made of these rich experimental results. Mr. Burbank shares in this feeling, and he would welcome any careful and sympathetic student who should essay to make a permanent record of the work as a contribution to scientific knowledge. His place is an experiment station of the best type. His work makes for progress.

SAVING BOYS FROM CRIME

THE SYMPATHETIC AND SCIENTIFIC METHOD OF PAROLE FOR YOUTHFUL CRIMINALS WHEREBY MORE THAN SIXTY PER CENT. ARE RESCUED FROM A LIFE OF DISORDER

BY

LILLIE HAMILTON FRENCH

HUMANE, reformatory, at once scientific and sympathetic, and always profoundly interesting is the practical working of the system in New York City whereby boys that have been convicted of some misdemeanor are put on parole. The parole is substituted for the prison with such remarkable results that a true way to reforming youthful delinquents has been found. It is full of suggestion, too, of an educational kind.

To understand it you should go to the Court of Special Sessions on that particular Friday morning in the month which has been set aside for receiving the reports of the boys that have been released on parole. You will find on the Bench at least three of the five Judges of Court, the room filled with the usual visitors, witnesses, lawyers, policemen and prisoners, among them the boys who have been summoned to listen to the reading of their reports. Upon the character of these reports depends their future—the renewal of their paroles, the suspension of their sentences, or their imprisonment in punishment for the misdemeanors for which they were originally convicted. The spectator is altogether without sensibility who is not profoundly impressed.

I was present on one of these Friday mornings. Nearly one hundred paroled boys were there. Each lad in turn came forward as his name was called and took his place alone before the bar. Mr. David Willard, to whom all parole cases are now referred by the Court, sat in the witness chair, his hands full of papers. The first boy who came up had well-brushed hair and clothes, and a high white spotless collar. Mr. Willard read from one of the papers that this boy had been on parole for two months, working with his old employer, the man from whom the boy had stolen. No further complaints had been made, and the boy during his probation period had been both honest and industrious. The Court suspended sentence, the presiding

Judge announcing to the lad his freedom and his chance to become an honest citizen. And the boy turned away, a free individual, his shoulders thrown back, his head lifted. None of us who saw him will ever forget him as he disappeared through the door.

Then there came a boy with a well-scrubbed, shining face, unmistakably of parents from the north of Europe. He had been on parole for a month, hard at work in a position which Mr. Willard had found for him. Although convicted of stealing, he had been surrounded from his childhood by bad associates, especially by evil influences at home. He had been trying to resist them, and his employer had no complaint to make. The Court renewed his parole for another month, the presiding Judge counselling him in earnest tones to remember how much depended upon himself, that though his task might be harder than that of other boys with better homes, his victory would be the greater when he finally saved himself.

Sometimes a report showed that a boy had been careless on parole, shiftless about his work, not as industrious as he might have been, or that he had been guilty of another misdemeanor, but was now determined on a better course. Whenever an inclination of good conduct was reported, the Court paroled the boy for another month, always with words of admonition, the lad being asked if he realized that he was still a prisoner of the Court, under its jurisdiction, and that he had been out on probation solely because the desire had been to help him help himself; or the boy was told that so good looking a boy was wanted as a citizen, not as a criminal; or again it was solemnly urged upon him when confronted by a new temptation to stop and recall what it would mean to him to stand before the bar for a second time a prisoner, the prospect of long confinement confronting him. The Court became at these moments both counsellor and guide, almost parental in its attitude—no stern justice here, inexorable in its mandates, but a wise and benignant principle caring more for the welfare of humanity than for the enactment of any mere technicalities of the law.

Sometimes, however, Mr. Willard's report was bad. The boy had not worked, nor given any account of himself, either in person or by mail; he was idle, unmanageable, mischievous, stubborn, bent on evil ways. When such a boy goes ou
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Judges. "The resu
remember some of

they were, what promising faces they had. Had we no parole system we should have been obliged to send many of them to prison. We could not even have suspended their sentences. In such cases, what chances would they have had? For a boy convicted of stealing in a department store could not have been taken back under suspended sentence. The example to the others would have been bad. But with the parole system the condition is changed. He goes back to prove himself."

The Public Education Association, of which Mrs. Schuyler Van Rensselaer is president, maintains a school for the boys detained in the Tombs prison, known as the Children's House. Here Mr. Willard lives, and here, when other means of refuge fail, he brings some of the boys on parole, keeping them under his personal supervision until he can find employment for them. This house is now an independent settlement supported by the contributions of a few persons interested in Mr. Willard's work. Another and quite distinct committee, of which Mr. Evert Jansen Wendell is the chairman, raises the funds for the support of the Probation work, which like the Tombs School, has no city aid, nor any association with politics. The boys are looked after, investigations have to be made and positions sought, although Mr. Willard's work in their behalf is altogether voluntary.

One of the Judges said to me: "The Parole System is excellent when a disinterested man like Mr. Willard is in charge of the boys, a man who will make them toe the mark; who is honest and conscientious, and who does the work because he wants to help them. The moment that such a position as his becomes subject to political appointment, or a salaried office, that moment it becomes a dangerous weapon. A political appointee in such a place might easily open the way, for instance, to the blackmailing of parents."

Mr. Willard began to think of the necessity of a parole and probation system after he had been but six months at work in the Tombs School. He discovered from investigating the stories told him by the boys, that many boys, who might have been convicted of certain offences, needed discipline of quite another kind. Thus, a lad of fourteen, arrested on the Bowery for disturbing the peace with a loaded pistol, was discovered not to be an incipient highwayman, but a drunkard. His mother had eloped with another man, and his father was a day laborer, always away from home. Again, a young man of twenty-two, convicted of petty larceny, was also proved to have been intoxicated at the time of the theft. Upon investigation it was discovered that he had a wife and children dependent on him for support. To imprison such a man for a first offence, or even to send him to some institution for six months, would have meant the destruction of the home. To have turned such a man adrift on the other hand, which is practically what a suspended sentence means, would have been to leave him without guidance. It is here again that the value of the Parole System comes in; for the boy is made to account for his whereabouts, either by visits to Mr. Willard or by daily postal cards. He is made to feel not only that a certain moral force is exercised over him, but that he has a certain morality account to render on his part; that his offence has not been condoned, but that an opportunity for reformation has, through the clemency of the Court, been extended to him.

When you ask Mr. Willard what the results of the system have been, he will tell you that out of a hundred and thirty cases brought up for trial, one hundred and five will be kept out of prison, allowed to go home instead of being sent to some penal institution. Out of this number, at least eighty-five will prove themselves worthy, and will enter upon a self-respecting career. The other twenty will go to jail. There is a pecuniary saving to the city's exchequer in each case of success of two dollars a week, that amount being the sum set apart for the support of its criminals. But in this pecuniary saving no one with whom I talked seemed particularly interested. It was the saving to the State of boys with good possibilities, the saving of boys to themselves, the making of good citizens, that always appeared as the object in view, no less among the judges than among the laymen.

Prevention proves to be far better with most boys than punishment. Many learn for the first time that they really have responsibilities to meet as young Americans and future citizens of the republic. A boy is always the better for feeling that he has, of his own free-will, reformed his life. And if he is willing to make a second trial he is worth more to the community on the streets than behind the bars.

THE UNKNOWN WRITER AND THE PUBLISHERS

MANUSCRIPTS OFTEN NOT EXAMINED BY PUBLISHERS — ACTUAL EXPERIENCES OF AN UNKNOWN WRITER WHO SOUGHT A PUBLISHER — READERS OFTEN INCOMPETENT

BY

AN UNKNOWN WRITER

[We print this article for its interest as a real experience. But if, as the author says, America has never produced any really great author, and such a one would not be appreciated for years if he did appear—his publisher who used "typewriter girls" for first readers was a man of common sense and good judgment.—ED.]

PERHAPS a reply is due from a typical unknown writer to some erroneous statements in the article by "A Publisher's Reader," in the April number of THE WORLD'S WORK.

He asserts that the "author" as yet unpublished believes that his manuscripts are not read; but that in fact "*every manuscript submitted is given a chance*" because publishers sometimes make fortunes from first books, whose writers are not in a position, as famous "authors" are, to demand heavy royalties. He says that such books as "David Harum" and "Eben Holden" must be accepted, or the publisher will lose a quarter of a million dollars. Stress is laid on the "fact" that it is easy for "fair work" to "pass muster;" but it is added that not more than one manuscript in a hundred is worthy—so these "unavailables" serve to produce the "infinite relief, the sensation of actual exhilaration, that invades the Reader of Many Manuscripts when he realizes that here at last is something good." "The next wrapper may uncover the *chef d'œuvre*." And when the "New Man" for whom "every house is searching," is discovered, "a hundred clashing presses" will print his books, and money will be advanced to him while he creates books.

Special attention is asked to his statement that, somewhere, an unpublished "author" is working on a story soon to be "*the literary sensation of the year*."

And he insists, no doubt with reason, that the average unknown "author" is sure to have his manuscript rejected. Indeed, that "author" is shown to be doomed, and justly, as he enters the publishers' office, to occupy the position of Sterne's Ass, which said: "Don't thrash me; but if you will you may."

But he does *not* state that no real "New Man" has been "discovered" by any publisher's reader, either in America or England, during the last twenty years, and that no really great writers have ever been produced in America. Indeed, if such a writer were to submit a manuscript to the average publisher's reader, the chances would be very remote that its merit would be recognized. Even the "commercial" merit of the "successful" books is often not realized by publishers' readers. If a "sensation of actual exhilaration" was experienced by the six sets of such readers who caused six publishing houses to reject "David Harum" before it was accepted by a seventh, such condemnations of the story were not proof of alleged "exhilaration" on the part of such six sets of readers. For they caused it to be refused by reversing their thumbs; their employers lost money, wailed, and reprimanded their readers for lack of perspicacity and taste.

Seventeen publishers rejected "Lorna Doone." "Innocents Abroad" is another book which, I believe, was rejected by several publishers. "Mr. Barnes of New York" was rejected by about every publisher in the country; yet the American News Company sold many thousands of copies when the book was finally published at its writer's expense.

The anonymous writer of this article confesses to having been guilty of writing a book,

which has just been published. His experiences with the publishers and their readers may be of interest; and certainly they disprove the assertion that publishers cause all manuscripts to be examined.

To please an only child, the writer's book was slowly written during a period of five years; it was revised seven times. Several hundred dollars were expended, buying black-and-white drawings for the story from an artist in Europe. When the manuscript was ready, a writer of national reputation was asked how a publisher for the book could be obtained. Here is some of the cynical advice by that writer:

"Take the advice of *Punch* to those who contemplate getting married: *Don't!* You will not find a publisher unless you pay him enough to cover cost of publication. Why? *You are unknown as a writer!* You say you have no friends, influence or acquaintance with publishers. You will fail, and justly, for you cannot possibly have any real message for the world, and your book can rightly be judged as unworthy without even an examination. The world has produced a scant dozen of really great writers. The Prophets, the Four Gospels, and, most wonderful of all, the Sermon on the Mount—all these are in a class by themselves. Yet people read them and the Psalms like religious parrots—blind to their grandeur. But tell me what three profane writers are greatest."

"Homer, Shakespeare, Dante," I replied.

"True! but what have they really done for humanity? Read Ruskin's terrific arraignment of them in his lecture on 'The Mystery of Life,' which you will find in 'Sesame and Lilies.' So what possible excuse have obscure *you* for writing? You have an itching to be called an 'author,' for 'fame,' and for earning money with your pen. But you have no longing to help humanity by writing, much less supreme faith that you can do so. Work for others, feed people, clothe them, relieve distress, minister to want, and you will be great and noble; but do not write for publication. Try rather to be one of the few who form the real literary world, and read only classics. Expect next to nothing from American authors, known or unknown, and less from publishers who have both eyes on the main chance of making money, as they serve hasty-pudding books to a public which has a depraved literary taste. Thus writers and publishers are blocking the way for the advancement of the world's real books. Charge them with this, and they call you a common scold; "but the truth remains."

These statements were disheartening; but eight duplicates of the writer's manuscript were simultaneously placed in the hands of eight publishing houses for examination by their readers. This was not a violation of any rule of ethics, for it was to be a case of sale to the highest bidder if bids were made—no contract or proposition being submitted to publishers, but merely the manuscript for preliminary approval or rejection, a mutually satisfactory contract to be hoped for later.

Thirty-two publishers "examined" the manuscript in two years. All refused to publish it. They were located as follows:

Indianapolis	1
Cincinnati	1
Philadelphia	2
Chicago	5
Boston	6
New York	17
	32

This does not include two publishers who sent my manuscript to readers whom I considered incompetent, and of whom I therefore asked its return. Neither does it include publishers who refused to become responsible for the safety of the drawings, and were asked to return them.

Note, now, the error of the statement: "If you submit a manuscript it will be read."

Six of these publishers returned the story with the specific statement that it had not been examined. Five others added to that statement, that it had not been examined because "it is of a kind we do not publish."

In other words, over thirty per cent. of the publishers rejected a carefully typewritten manuscript, revised seven times, with about eight hundred dollars' worth of black-and-white pictures, *without examination!* This was the way they were "looking" for the possible "New Man!"

The following action was taken by the twenty-one other publishers:

Six rejected the story because it had failed to pass each of four readers with the approval of all.

Four rejected it because its writer would not furnish them money to cover cost of publication, and then give them all money receipts from sales of the book! Two of

these four seemed hurt that what they called a "reasonable" suggestion was rejected by the "unknown writer."

Four rejected the story because the writer refused to buy enough copies of the book when printed to cover their statement of cost of publication.

And seven rejected the story for the *specifically stated reason that its author was unknown,* so the book would be "an uncertain commercial venture, in spite of any merit it might have."

All the publishers treated the writer with the utmost courtesy; in all cases they softened the unwelcome fact of rejection by kind words of deprecation and regret. But some were very frank. One New York publisher said to me:

"You will not get your book published unless you pay for the cost of the plant, and not then if it is so bad that a publisher would be ashamed to have his imprint seen on it. Why? Your obscurity and lack of influence make your manuscript impossible. Become famous or infamous before you write. Sink a Spanish fleet, marry a great heiress, get yourself arrested or tortured—anything so you will be talked about, and are in the public eye. Then I will gladly publish inanities from you, rather than really worthy work from any unknown genius. You may be a great writer; the chances are a million to one you are not; and if you were, your book would probably be a failure as a cash venture."

A few of the publishers showed me written opinions of the story by readers; two or three even gave me the names of their readers. But I already had lists of the readers for nearly all the leading publishers. Some have asked me how I obtained the lists. They were offered to me by a "literary bureau," and I paid a small sum for them. I made no use of these lists except twice, when I withdrew the manuscript from publishers who had sent it to men as first readers whom I considered incompetent. In each case I knew within a few hours that the manuscript had been sent to an incompetent reader, and the information was volunteered or furnished to me by persons whom I advised that I did not wish it.

One member of a leading publishing house read my story aloud to his wife and daughter. All three recommended it for publication. Another member of the firm read the first ten pages after he had been to the theater, and had secured a late supper of deviled crabs. He rejected the whole story.

I now make a statement which has been questioned as manifestly a mistake. With utmost emphasis I assert that a prominent publisher (not one in New York) told me that as not one manuscript in a hundred was accepted, he *could not afford* to pay a really competent judge to wade through the mass of chaff to get the single kernel; therefore, he was obliged to rely largely on his typewriter girls as *first* judges of stories. He added that it was "*too bad to have to give up fifty cents or a dollar to the girl for her verdict that the story was unavailable.*"

Think of Hawthorne's "Scarlet Letter" in the hands of such a reader, earning her dollar and deciding, as first judge, that the manuscript would not "do!"

Men in charge of the illustration "departments" for prominent New York magazines had pronounced the drawings for my book "first-class." Yet every publisher regarded them with disfavor—the usual phrase being that "they did not impress." A great publisher from London rejected the manuscript on sight "because the head of a horse in one of the pictures is *awful!*" Of course his true reason was that the writer was unknown; but the reason given was worthy of Thackeray's *Bungay.*

Two publishers advised me that the story had passed three of their readers, while a fourth one had rejected; and added that if he also had approved, it would have been returned to me anyhow. They did not answer my queries why, therefore, they had taken the trouble to have the manuscript examined at all.

One New York publisher lost the manuscript for ten days. A Chicago publisher held the drawings for ten days after writing me they had been shipped to me. Nearly all violated written promises to decide by a date specified. Over a dozen held the manuscript two weeks longer than the date fixed by themselves for a return. Six held it a month, and three six weeks, longer than the return dates. So it will be seen how vital it was to use several copies of the story, instead of one, while seeking preliminary approval.

Three publishers wrote me much the same thing, saying that if I would write a story like one by Dickens or Thackeray, they would print it! I hold these letters.

Five desired to see the illustrations before seeing the manuscript. Six said they must see the manuscript first. Two or three advised me orally that they really did not know what to do, so rejected to be "on the safe side." One who had already agreed to sign a contract, finally said he must first send it to "a shrewd old fellow over in Boston." This Boston party advised the publisher to reject unless he was *sure* the book would "be a financial plum." He refused it.

All this time I was receiving circulars from "literary bureaus" offering to revise (for a consideration) and "perfect" the story, and *get me a publisher.* They said they "stood between the author and the publisher." I did not notice these circulars. I also had three offensive callers, loth to give their names and addresses, who offered me "influence" with a publisher for pay. They were shown out of my rooms.

About six hundred lines of rhymes were in the story—most carefully revised, and edited by a thorough expert on poetical composition, and writer of several standard school-books on English. A Boston woman "visiting New York" called on me, said she had acted as a reader of my story for a Boston publisher, and wanted to revise the rhymes in it, for pay. She showed me a copy of her alleged written opinion; and I made the following extract from it, an amusing example of cheap pedantry:

"The poems in it are without rhythm. In forming the trochees, cesura, anapest and iambus seem to be unknown to the writer. Euphony and alliteration are neglected. One of the poems should have each stanza close with an Alexandrine. In short, the verse is not acatelectic."

Yet here is an extract from a written opinion by a New York reader, shown to me by his publisher employer:

"The poems are very fine; indeed, they are so much finer than the prose of the story proper that it seems very unlikely they could have been written by the same person."

A Boston publisher said his readers called the prose "simple in style, flowing, worthy, with remarkably good sequence of incident." A Chicago publisher's reader reported that the story "broke off and compelled the reader to go to other scenes and incidents—a fatal defect."

These contradictions by readers could be considerably extended. I close mention of them by citing a Philadelphia reader's opinion that there was too little of a certain line of incident in the story, and that of a Chicago reader that there was too much.

After two years of great effort, and regarding difficulties as merely obstacles to be overcome, I had found little but discouragement, and had a lot of letters to and from publishers which exceeded the story itself in bulk. I was thinking of submitting the manuscript to publishers in England, when it dawned upon me that perhaps I could do for American publishers what I did not believe they were in my case doing for themselves—that is, submit the story to undeniable literary experts and famous scholars. So I placed a duplicate of the story in the hands of each of two writers of national reputation, and said:

"What you charge pays you liberally for examination of this manuscript, and writing an opinion of it. Be sure to condemn it if you must, for then I wish to suppress the book and escape ridicule. I rely on you to protect me. But if you approve, you must write and sign an opinion accordingly, and give me full authority to say to any publisher that you stand by what you have said in praise."

Both these experts praised the story. One declared it was "very charming;" the other said it would "take a high place among books of its kind."

Armed with these letters, I invaded the offices of a prominent publisher whose readers had already condemned the story, and said that I was not prepared to listen with much patience to opinions by his readers, when I held two written opinions by acknowledged writers and scholars that the story was meritorious. The long quest for a publisher ended—the adverse decision was reversed, a very favorable contract was signed—the book is on sale. My prayer is that very few copies will be purchased, but that after some years, its sales will become larger; otherwise I shall know the book is unworthy.

I ask readers to see from citation of opinions by two experts about other books, how little the average publisher's reader can judge of the merits of a manuscript.

Poe's analysis of the mental processes by which "The Raven" arrived at completeness proves him to have been an exceptionally good judge and writer of poetry. Yet this lecturer

on "The Poetic Principle," and writer of "The Raven" and "The Bells," says in an elaborate review of Horne's epic poem "Orion:"

"Its beauties are *supreme*." "The description of Hell in 'Paradise Lost' is *altogether inferior* in graphic effect, in originality, in expression, in the true imagination, to these magnificent, these unparalleled passages." "An exalted sense of art *for which we look in vain in any other poem*." "In all that regards the loftiest and holy attributes of the true poetry, 'Orion' has *never* been excelled; indeed, we feel strongly inclined to say that it has never been *equalled*." "One of the noblest, if not the very noblest poetical work of the age." (See essay on R. H. Horne.)

Poe himself italicized the words as shown in these quotations. Yet grim time "grinding slowly, but with exactness," has demonstrated that "Orion" is little more than rhymed sleight and tinsel. Probably not one per cent. of the reading public ever heard of Horne or his poem.

And before me is a typewritten copy of Carlyle's "Signs of the Times," first published in the Edinburgh *Review* in 1829. This copy had been made by a colored boy in a New York railroad office merely for practice on the typewriter. But, in a spirit of malicious mischief almost criminal, he changed its title to "Reveries of a Recluse," and sent it as an original essay by himself to a famous publishing house in New York. And here before me is the letter from that house, saying the returned essay is unavailable. Upon this manuscript — also before me — is an unerased endorsement in pencil by the publisher's reader, now dead, but yet well known here and in England. It reads as follows, over his initials:

"The work of a pompous pedant who cannot punctuate or capitalize."

Now, if Poe was so mistaken about Horne's epic, and this other notable writer proved himself to be a shallow connoisseur by speaking so arrogantly of what is known to be a classic English essay, what more than guess-work can be the judgments of the incapable, underpaid and overworked readers for the modern publishing houses, wading through dreary manuscript rubbish, all bad, looking for "the literary sensation of the year?" They simply cannot and do not judge well. Even Emerson called Hawthorne's stories "mere mush," and Hawthorne styled Emerson's books "muddy philosophy." Then what worthy work can be expected of the bizarre and nondescript lot of publishers' readers— college tutors, decayed ex-editors, faded gentlemen wearing long hair for appearance and economy, truculent *Bludyers*, unsuccessful writers who have sunk to professional readers, or busy newspaper men who sample a manuscript as a grocer would a firkin of butter, by reading a few sentences in the middle? And typewriter girls!

Of course, it seems absurd that publishers with millions invested in books should have such readers. Let those who think my words are extravagant and incorrect recall their many unsuccessful publications and reconsider before they condemn. Their excuse and dilemma lie largely in the further fact that no quartette of readers, no group of literary men, not even the world without lapse of time, can tell whether a book will be an addition, real and permanent, to the world's scant but inexpressibly precious store of real literature. I mean by literature books of poetry and fiction, not books by specialists on art and science.

Perhaps this quotation from Carlyle will make this more clear; he is speaking of this very subject of real and false writers and books:

"The heavenly Luminary rises amid vapors: star-gazers enough must scan it with critical telescopes; it makes no blazing, the world can either look at it or forbear looking at it; not till after a time and times does its celestial, eternal nature become indubitable. Pleasant, on the other hand, is the blazing of a tar barrel; the crowd dance merrily round it, with loud huzzahing and universal three-times-three, and, like Homer's peasants, 'bless the useful light;' but unhappily it so soon ends in darkness, foul, choking smoke, and is kicked into the gutters, a nameless imbroglio of charred staves, pitch-cinders and *vomissement du Diable!*"

This is true today. So our best reviews keep asking: "What will be the next *craze* in fiction?" For the public will scan a mushroom book, believe in paid-for praise of it by magazine or newspaper, and exchange plaudits. This is the public which delights in cheap antithesis and tawdry sparkle, horrors, swashbuckler heroes mouthing passions torn to rags, mawkish sentiment, strut and pose without meaning, stale epigram, dissection of

processes and states of human decadence, the public which went wild over "Trilby," and has all but forgotten her.

One more statement of my estimate of the average publisher's reader. If that "inspired idiot," Oliver Goldsmith, could send the first manuscript of his classic story "The Vicar of Wakefield" to an American publishing house, their readers, seeking for "the sensation of the year," could be absolutely trusted to condemn it. Probably it would reach a second reader, who would yawn, puff his cheap cigar, summon the tired powers of his "mind," wave his long ears, and report:

"This is rather commonplace. It lacks sequence; the interest flags. There is not enough 'suspense,' and the story lacks harmony as a whole. The incident of the boy selling a horse for a lot of green spectacles is rubbish, improbable, and should be removed. Worse, it is a palpable imitation of two other stories. It is strained in its sadness, too insipid and goody-goody in its pictures of domestic life. It has an offensive *insouciance;* its incidents lack verisimilitude."

Then the publishers, acting on the opinion of two first readers, would return the manuscript to Mr. Goldsmith, with the usual polite note that rejection did not imply lack of merit.

But suppose the story *were* accepted and the book actually published. Nothing is more certain than that it would not sell well. Verily it would not be "the literary sensation of the year," nor the "latest fad." Its worth would dawn slowly on the world; with lapse of years its perennial nature would be recognized.

And what then?

Only real literary men would read it. Not two per cent. of the reading public of to-day has ever read, much less joyed over, Goldsmith's exquisite story.

THE BEST PLAN TO SAVE MAGAZINE LITERATURE

BY

M. B. CORSE

SHALL I throw away my magazines or shall I bind them? Everybody comes face to face with this question. To keep them unbound is impracticable. They are no sooner thrown away than you recall something that you wish you had kept. To bind them and to keep all their contents loads up your book-cases with much merely ephemeral matter. I have devised a system that is a compromise; and for my own needs it solves the problem. It has become, also, a recreation.

At the end of each month I take the magazines apart and rearrange the material in temporary covers. Much material is rejected. If an article is uninteresting to me I consign it to the waste basket. We are each interested in different things and it is not probable that any two of us would put the same value on the same material. It is entirely practicable, however, for anyone to pursue the method on the same general lines, preserving what he likes under such titles as suits his fancy and rejecting the rest.

As the result of last year's work I am at present sending to the binder volumes with the following titles:—South African War, Short Stories, Historical Incidents, Biographical Sketches, The Stage, and the following novels: Dr. North and His Friends, A Bicycle of Cathay and The Isle of Unrest, Eleanor and The Mantle of Elijah under one cover, and Watson's Life of the Master, Morley's Life of Cromwell and Dr. O'Meara's Talks with Napoleon under one cover.

The volume on the South African War contains three hundred and fourteen pages and, while necessarily fragmentary in character, it contains much interesting matter about that tenacious struggle and in such shape that it can be easily referred to.

The volume of Short Stories was the most

difficult of all to compile, not because of the scarcity of material but because of the abundance of it. There was so much more than could be bound in one volume without disregarding the very object I sought to accomplish, namely, keeping the weight within convenient limits. The material was gone over many times and story after story reluctantly put aside until the volume was reduced to about six hundred pages. It would have been better perhaps to reduce the size still further. It contains the very best, according to my taste and judgment, of the short stories which have appeared during the year.

I find those short story collections very popular. Rapid readers dispose of the current magazines by the eighth or tenth of the month at latest and they then find these bound copies very convenient to fall back on. All of the stories are well worth reading a second time, and, indeed, the second reading is often more entertaining than the first. One of my friends in questioning the usefulness of the undertaking said that he had read them all as they came out and that it was hardly worth while reading them again. At my suggestion he took one of the volumes home for perusal. When he returned it he frankly admitted that he found many very interesting stories that he had not read before.

The volume on historical incidents is valuable both from the standpoint of the general reader and as a reference book. It contains such articles as "The Sherman-Johnston Convention," "An Unwritten Chapter in American Diplomacy," "The Montgomery Race Conference," "The Last Days of the Confederate Government," (and other articles of that series) "The Greatest of World's Fairs," "The Galveston Tragedy," "The Great Hoboken Fire," "Slave Trade in America," and others which it was thought could be put in this class. In selecting these articles much latitude was allowed, and frequently I was sorely perplexed as to whether certain articles properly belonged here. It requires several years to compile a volume of this kind, because such articles do not occur very frequently. Sometimes the whole month's output will contribute only one or two articles. "The Volume of Biographical Sketches" is encyclopædic in character. It contains articles on prominent public men of both the past and the present. Some of the sketches are of General Chaffee, Rudyard Kipling, William Her
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A SHORT GUIDE TO NEW BOOKS

A Sailor's Log

Rear Admiral ROBLEY D. EVANS gives us in his "Recollections of Forty Years of Naval Life" an extremely interesting autobiography, and also illuminating information concerning our Navy, past and present. It is the record of a born fighter and commander—prompt, resourceful, resolute, instant in resentment, a bad enemy, an ardent and militant patriot, yet enduring and self-restrained when necessary. A Virginian by birth, he entered the Naval Academy *via* Utah, fighting Indians on the way, and took the Union side in the Civil War. He was desperately wounded at Fort Fisher, and saved his legs in hospital at the point of his revolver. Crippled by his wounds, he was invalided by the surgical staff, which had failed to amputate, and got back on the active list only by a special act of Congress and the evidence of fitness by hard service. He saw the decay of the old Navy, and assisted at the birth of the new. He commanded the *Yorktown* in Valparaiso harbor, in hourly danger of destruction, while the issue of peace or war with Chili was being decided; policed Behring Sea when trouble with Great Britain seemed imminent; attended the impressive ceremonies at the opening of the Kiel canal; and commanded the *Iowa* during the war with Spain. The record is one of loyal and honorable service rendered often at critical and trying times. (Appleton. $2.50 net.)

The Great War Trek

With no attempt to treat the larger considerations of the Boer War, JAMES BARNES gives here a graphic personal narrative of events in South Africa as he saw them at close range. Mr. BARNES went out to the war as correspondent for the *Outlook* and the McClure News Syndicate, and later, when Julian Ralph was injured at Karree, took the latter's place as correspondent for the London *Daily Mail*. His story of the war is fascinating, vital, full of vivid color—a brilliant, realistic panorama of the English advance from Modder River to Pretoria. It throws, too, some curious side lights on disputed questions of fact. (Appleton. $1.50 net.)

The Manager of the B. & A.

The seventh in the Harpers' series of American novels is a tale of strenuous railroading in Michigan, with the usual love complication and the not unexpected strike. Mr. VAUGHAN KESTER has caught with some skill the local color of the Northwest, and has drawn his characters with an individual touch that makes them vital. Though the style is journalistic, the plot haphazardly constructed and melodramatic—for Mr. KESTER has much to learn in the technique of novel-writing—the book contains for those who take pleasure in an unvarnished tale the elements of an afternoon's enjoyment. (Harper. $1.50.)

A Maryland Manor

Mr. FREDERIC EMORY has written a melodramatic story of love and the war-time that holds one's interest from first to last. Mr. EMORY has drawn a particularly good hero and a vividly bad villain. The book has many structural defects, and in places seems strained to unreality. But that the story is interesting no one will deny. (Stokes. $1.50.)

The Puppet Crown

A story built up on one impossible event, with two passable characters whom one rather likes, two very bad ones whom one greatly dislikes, and a dozen mediocre people; with less action than is usual in this class of novel; and a most unsatisfactory end. This is "The Puppet Crown." But Mr. MACGRATH escapes severe criticism for a poor story through his great cleverness in writing pretty English. Daintiness in his choice of words and a most pleasing smoothness go far toward making one forget the shortcomings of characters and plot. (Bowen-Merrill. $1.50.)

Insect Book

There is so very little actual knowledge of the science of entomology that Dr. L. O. HOWARD's book "The Insect Book," should be of great help and interest to teachers and students—the more so since the author is an unquestionable authority upon the subject. The work is a very thorough and painstaking account of the North American insects, exclusive of butterflies and moths, and bears the mark of much thought and labor. The addenda is unusually complete. Special mention should be made also of the illustrations which, including a number of colored full plates, assist the value of the book greatly. (Doubleday, Page. $1.50.)

Nature Biographies

"Nature Biographies" is an attractive and useful little book comprising a series of essays and chapters (several of which have appeared and attracted attention elsewhere) upon the lives, habits and being of the commoner and more frequently met with species of moths, butterflies, grasshoppers and other insects of a like nature. It is to be particularly commended for the reason that unlike the majority of such works it is simply and untechnically written, and so is not only easy to understand and instructive, but pleasant to read as well.

The illustrating, by photography, is good. The author, CLARENCE MOORES WEED, is a well-known authority upon entomology. (Doubleday, Page. $1.50.)

In Thibet and Chinese Turkestan

Captain H. H. P. DEASY, a British army officer, has added to the stock of geographical knowledge by his surveys in this extremely difficult and inaccessible region. Having carefully prepared himself for the work of an explorer, he began in 1896 a series of expeditions, at his own expense, the narrative and results of which are now presented in a bulky and abundantly illustrated volume, with map and appendices. The book is a sober and modest account of scientific observations made under great difficulties, and will most interest other geographers and scientists. It does not enter into the political question which Russia's advance in Central Asia has raised. (Longmans. $5.00 net.)

The Sea-Beach at Ebb-Tide

Miss AUGUSTA FOOTE ARNOLD, who attempts to tell us "how to know" the seashore, almost frightens off the amateur by formidable-looking classifications bristling with scientific technicalities and unfamiliar words. But persistent search reveals a wealth of interesting information, much of it related with charm, concerning the sea-weeds, sponges, corals, worms, starfish, sea-urchins, lobsters, crabs, clams and numerous other shell dwellers found on the beaches of the Atlantic and Pacific Oceans, a difficult task well done. More than six hundred illustrations are the most popular feature of the book. (Century Co. $2.40 net.)

Practical Golf

A book well named and all that it pretends to be. Mr. WALTER J. TRAVIS, in addition to being the champion of the game in America, is the most thorough student of golf that we have ever had in this country. He has the ability to express himself clearly. His book is for advanced players and is the most valuable contribution to the literature of golf ever published in this country. (Harper. $2.00 net.)

The Mediterranean Race

G. SERGI, Professor of Anthropology in the University of Rome, presents in this book an English version of his theory that the original European stocks which settled in the Mediterranean basin came from Africa, not from Asia; that Greece, for example, got its religion from Egypt and not from India; and so on. He bases his assertions on the similarity of the physical anthropology of the present Mediterranean and the past African races. Professor Sergi thinks that the Asians came after the Africans; and that Indo-Germanism must be taken with a big grain of salt. His book is one for the student. (Scribner. (Imported.) $1.50.)

Mosquitoes

Dr. L. O. HOWARD, chief entomologist of the United States Department of Agriculture, has prepared a very full, timely, and interesting volume on these pests. The work is at once scientific and practical, for it not only gives the results of the most recent investigations, which have established results of world-wide importance, but also tells how civilized communities may protect themselves against mosquitoes and the diseases which they propagate. This is a book which everybody ought to read, and which anybody can understand. Not only the comfort but the health of thousands of homes may be promoted by taking to heart its lessons. (McClure, Phillips. $1.50 net.)

General Meade

Mr. ISAAC R. PENNYPACKER is the author of this, the fourth volume in the Great Commanders series, in which the winner of Gettysburg, the most critical battle of the Civil War, is characterized. The official War Records form the basis of the narrative, but many other sources of information concerning the military movements described have been studied. There are a number of diagrams and maps, but not nearly enough to make fully intelligible the very detailed accounts of the movements of the troops. The book seems very conscientiously prepared, but is not particularly readable. (Appleton. $1.50.)

Life and Time of William Lowndes

Mrs. ST. JULIAN RAVENEL has prepared an excellent biography of her father, the memory of whose services has perhaps withdrawn too completely into the background with the lapse of time. A prominent figure in South Carolina political and social life during the first quarter of the nineteenth century, he represented that State in Congress from 1811 to 1822, and was one of the leading figures there. He was a fine example of the old school of Southern gentlemen, and in his day a rival as well as close friend of Calhoun. (Houghton, Mifflin. $1.50.)

Individualism and Collectivism

Mr. EDMOND KELLY, late lecturer at Columbia University, gives this title to the second volume of his "Government, or Human Evolution." The standpoint is ethical. The concept of justice demands a social order in which all men shall have, as nearly as possible, equal opportunities and equal burdens. Human evolution is taking place in an artificial environment, which can be modified by intelligence; society is a construction, not an organism. Natural evolution by selection is unjust to the individual, and tends to perpetuate base rather than noble types.

From this starting point the author examines individualism and collectivism as rival theories of government. Individualism, with private property

as its instrument, has on the whole worked badly; competition is the enemy of justice. The main purpose of collectivism, on the other hand, is to strike at the root of selfishness. It would alleviate the worst evils from which society suffers —pauperism, prostitution, crime, war. Toward it society is slowly moving, and it is not, as its opponents say, impracticable.

The book is thoughtful, well written, and restrained in tone; but its assertions are often amazing, and it cannot at all be said to establish its main contention. (Longmans. $2.50.)

The Bolivian Andes

Sir MARTIN CONWAY, greatest of mountain climbers, explored in 1898 and 1900 a part of the Cordillera Real, in the least known region of South America. His most perilous achievements were the ascent of the great peaks of Illimani and Sorata, both over 21,000 feet high. Possessing the power of vivid and picturesque description as well as the spirit of restless observation of whatever falls in his way, he has written a most entertaining book, which combines adventure, scientific information, and much that is of interest concerning the natural resources and the industrial, economic, social and political conditions of the little traveled regions through which he passed. (Harper. $3.00 net.)

Monopolies Past and Present

Professor JAMES EDWARD LEROSSIGNOL is the author of this careful, intelligent and up-to-date discussion of perhaps the most important subject which now occupies public attention. Beginning with ancient and mediæval monopolies, he takes up in succession guilds, exclusive trading companies, patents and copyrights, and so arrives at the pressing and difficult questions of present importance involved in municipal, railway and capitalistic monopolies. In the case of the first two the author leans toward private ownership with public control. The fairness with which both sides of every question are presented is conspicuous. (Crowell. $1.25.)

His Letters

"JULIEN GORDON" publishes a volume of feigned love-letters, with "The Passion of Love" for sub-title, on which the reader whose appetite for these decoctions is not yet stated may feast to the full. But the honey has much more than a suspicion of glucose. (Appleton. $1.50.)

War's Brighter Side

Mr. JULIAN RALPH tells how four of the war correspondents with Lord Roberts' army undertook, at the General's request, to publish a newspaper for a month at Bloemfontein in the spring of 1900, after the capture of the town by the British forces. It was a labor of love on their part, and an arduous one at that, for "copy" was scarce and the editors were busy. But campaigning is not without its lighter humors, as the numerous from "The Friend" here republished testify. Kipling and Conan Doyle are among the contributors. But the book is more than amusing; from it can be gleaned a good deal concerning the conditions in the city at the time. (Appleton. $1.50.)

Sirius

Miss ELLEN THORNEYCROFT FOWLER'S volume of short stories takes its title from the first one of the collection. They have a pleasant, if somewhat superficial cleverness, and give an effect of novelty rather than originality, due to a sublime disregard for the probable. In character conception the author is far from strong, and the pathetic, where it is introduced, is overworked, but the readers of "Concerning Isabel Carnaby" do not need to be told that with Miss Fowler one is at least always sure of entertainment. (Appleton. $1.50.)

The Old New York Frontier

Mr. FRANCIS WHITING HALSEY sets forth in this book the results of careful and prolonged study of the history of Central New York, from the first coming of the white man to the end of the eighteenth century. The main interest centres about the border struggles precipitated by the Revolutionary War. By the treaty of Fort Stanwix in 1768 the north and south line between the English and Indian territory was fixed, about as far west as where Rome now stands. Across this line, after the revolt of the colonists, swept the devastating invasions of savage redmen and more savage Tories, which resulted in the bloody battle of Ohiskany and the Wyoming and Cherry Valley massacres. The whole story is most interesting, and Mr. Halsey deserves the thanks of all interested in American history for having told it so well. Maps and illustrations add to the value of the volume. (Scribner. $2.50 net.)

Old Bowen's Legacy

Mr. EDWIN ASA DIX, the author of "Deacon Bradbury," has written another story of country life. Its motive and treatment are moral, its people are the everyday country novel people, its descriptions good. But the typical novel of typical American rural life is becoming monotonous in its frequency. With all its affected genuineness this sort of novel is not always—indeed not often—real. Of its type, this one does very well, however. (Century Co. $1.50.)

Days Like These

Mr. E. W. TOWNSEND, who has always written genuinely of the east side and the tenement districts of New York, has in this novel brought into conjunction the "swamp" and the uptown district. A poor girl comes into a fortune and finally marries her rich uncle's lawyer who is the typical story-book American, strong physically, mentally, morally. The people of the book who are most real are the tenement folk, Mrs. Cassidy, the twins, Micky, Mulgrave and the rest. (Harpers. $1.50.)

THE MONTH'S MOST POPULAR BOOKS

REPORTS from book-dealers in Louisville, San Francisco, St. Paul, Albany, New York, New Haven, Boston, Washington, Cincinnati, Kansas City, Detroit, Buffalo, Toronto, Rochester, Pittsburg and Dallas, and from librarians in Hartford, Jersey City, Springfield, Buffalo, San Francisco, Brooklyn, Detroit, Atlanta, Cincinnati, New York, Chicago, Minneapolis and Bridgeport, combine into the following composite lists showing demand for books:

BOOK-DEALERS' REPORTS

1. The Crisis—Churchill. (Macmillan.)
2. The Helmet of Navarre—Runkle. (Century.)
3. The Puppet Crown—McGrath. (Bowen-Merrill.)
4. Truth Dexter—McCall. (Little, Brown.)
5. Graustark—McCutcheon. (Stone.)
6. Tarry Thou Till I Come—Croly. (Funk & Wagnalls.)
7. The Visits of Elizabeth—Glyn. (Lane.)
8. The Octopus—Norris. (Doubleday, Page.)
9. Penelope's Irish Experiences—Wiggin. (Houghton, Mifflin.)
10. Jack Raymond—Voynich. (Lippincott.)
11. Like Another Helen—Horton. (Bowen-Merrill.)
12. A Sailor's Log—Evans. (Appleton.)
13. The Turn of the Road—Frothingham. (Houghton, Mifflin.)
14. The Aristocrats—Anon. (Lane.)
15. In Search of Mademoiselle—Gibbs. (Coates.)
16. Up From Slavery — Washington. (Doubleday, Page.)
17. Ralph Marlowe—Naylor. (Saalfield.)
18. The Tribulations of a Princess—Anon. (Harper.)
19. Sir Christopher—Goodwin. (Little, Brown.)
20. A Dream of Empire—Venable. (Dodd, Mead.)
21. Monsieur Beaucaire—Tarkington. (McClure, Phillips.)
22. Juletty—McElroy. (Crowell.)
23. Valencia's Garden — Crowninshield. (McClure, Phillips.)
24. Sir John and the American Girl—Bell. (Harper.)
25. Alice of Old Vincennes — Thompson. (Bowen-Merrill.)
26. Katherine Day—Fuller. (Putnam.)
27. The Sea Beach at Ebb Tide—Arnold. (Century.)
28. Sister Teresa—Moore. (Lippincott.)
29. Days Like These—Townsend. (Harper.)
30. Every Inch a King—Sawyer. (Dodd, Mead.)

LIBRARIANS' REPORTS

1. The Crisis—Churchill. (Macmillan.)
2. The Helmet of Navarre—Runkle. (Century.)
3. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
4. Eben Holden—Bacheller. (Lothrop.)
5. The Life and Death of Richard Yea-and-Nay—Hewlett. (Macmillan.)
6. Quincy Adams Sawyer—Pidgin. (Clark.)
7. The Visits of Elizabeth—Glyn. (Lane.)
8. A Sailor's Log—Evans. (Appleton.)
9. The Cardinal's Snuff Box—Harland. (Lane.)
10. The Life of Phillips Brooks—Allen. (Dutton.)
11. Like Another Helen—Horton. (Bowen-Merrill.)
12. Truth Dexter—McElroy. (Crowell.)
13. The Life and Letters of Thomas H. Huxley—Huxley (Appleton.)
14. Eleanor—Ward. (Harper.)
15. Up from Slavery—Washington. (Doubleday, Page.)
16. Miss Pritchard's Wedding Trip—Burnham. (Houghton, Mifflin.)
17. When Knighthood Was in Flower—Major. (Bowen-Merrill.)
18. In the Palace of the King—Crawford. (Macmillan.)
19. Uncle Terry—Munn. (Lee, Shepard.)
20. Stringtown on the Pike—Lloyd. (Dodd, Mead.)
21. Tarry Thou Till I Come—Croly. (Funk & Wagnalls.)
22. The Octopus—Norris. (Doubleday, Page.)
23. Babs the Impossible—Grand. (Harper.)
24. In the Name of Woman—Marchant. (Stokes.)
25. The Tribulations of a Princess—Anon. (Harper.)
26. The Gentleman from Indiana—Tarkington. (Doubleday, Page.)
27. Penelope's Irish Experiences—Wiggin. (Houghton, Mifflin.)
28. Jack Raymond—Voynich. (Lippincott.)
29. Black Rock—Connor. (Revell.)
30. Her Mountain Lover—Garland. (Century.)

"The Crisis" is by far the most popular book of the month. In fact it was at the head of every individual list. Among the others, "The Helmet of Navarre," "Truth Dexter," "The Visits of Elizabeth," "Like Another Helen," and "A Sailor's Log," are among the first twelve in each list, and after "The Crisis" have, probably, the widest popularity. The total number of books appearing on both lists is thirteen. There are three books not fiction on the book-dealers' list and four on the librarians'.

On the book-dealers' list, "The Visits of Elizabeth" has fallen back to make way for "The Puppet Crown." "Alice of Old Vincennes" has dropped to the bottom of the list, and "Eben Holden" is gone altogether. "The Octopus" preserves its place unchanged. The true stories of Booker Washington and Admiral Evans continue to rival in popularity works of pure fiction.

The librarians' list is fairly stable. Here, as in the other column, "The Helmet of Navarre" is just as distinctly second as "The Crisis" is first; but among the succeeding books, old public favorites like "Eben Holden" and "Quincy Adams Sawyer" do not yield, as in the book-dealers' sales, to newer publications. "Truth Dexter" makes its first appearance on the library list in the twelfth position. Few new books have attracted widespread attention with the exception of "The Crisis."

By-Products of Standard Oil

AT least one-third of the Standard Oil Company's product used to be wasted. Today the waste is manufactured into more than two hundred by-products. Not a drop is lost. The naphtha was burned as fuel in the works, and the tar was allowed to run off through waste pipes. Now the naphtha is worked up into different grades of gasoline for all kinds of gasoline motors, engines, automobiles, naphtha launches and for use in the arts. Stove gasoline is used in enormous quantities—about fifty million gallons a year—particularly in the South and West. There it is carted through the streets in tanks and sold at six or eight cents a gallon. Here alone is a saving of approximately $3,500,000. Gas naphtha, too, is used in every large city for enriching water gas, and benzine with its thousand household and industrial uses.

The tar products form a second and larger group. These are developed by distilling tar just as crude oil is distilled, only with special apparatus. Thus gas oil is made, which is used for gas-making purposes, particularly in England, where it is used to serve the same purpose as naphtha. A series of paraffine distillants are chilled and pressed. This series includes wax, and the oil that is pressed out is made up into the so-called paraffine oils for lubricating purposes. There are scores of grades suited for every kind of machinery. Some are worked up into greases: car-grease, axle-grease and the rest. The refined wax is used to make wax-tapers, candles and eventually, even chewing-gum. The makers of chewing-gum, hair-oil, blacking, vaseline, headache powders, salves, get much of their material from the Standard Oil Company. The wax is used also for preserving purposes, as air-tighting fruit, coating hams, etc., and for making waxed papers and wax for laundries.

Manufacturers of paints and of dyes and varnish, instead of building scores of plants, look to the Standard Oil Company and its allied industries for ingredients of their product. The acid used in the manufacture of refined oil was allowed to run to waste. Now it is separated and stored up for use again, and the refuse is turned into fertilizer. The gas coming from the stills was allowed to escape. Now it is saved and burned.

Altogether an extraordinary amount of useful material that was once cast away because it had nothing to do with the oil business, is turned into millions of dollars' worth of profitable and useful commodities every year. These saved millions make it possible to ask only a comparatively small price for the main staple. Naphtha and tar are worth more than oil. As much of these elements as possible is taken from the oil, which is thereby improved in quality as well as cheapened in price.

It has come to a point today where a man can depend upon the twenty or more principal establishments of the Standard Oil Company to furnish the asphaltum over which he rides to his home, the gasoline in the automobile in which he rides, the benzine that is used to clean the machine, the paraffine preparation with which his house has been painted to protect it from the weather, the paint on his doors, the oil on the hinges, the taper with which he lights his lamps, the blacking with which he polishes his shoes, the salve he uses to annoint a wound, the varnish on his table, the dyes in his carpet, the headache powder he may take after dinner, the materials with which he may paint a picture in his studio later on, if he chooses, and the candles that stand upon the mantel in his library.

A Novel Revival of the Apprentice System

AN innovation of far-reaching industrial importance has recently been made by the Baldwin Locomotive Works of Philadelphia. With the aim of turning out a class of technically skilful mechanics and mechanical engineers, the company has set up an apprenticeship system offering to boys and young men a chance to supplement their school training with two, three or four years' experience in the locomotive works. In other words, the factory has become a school where graduates of high and grammar schools can learn a definite trade, where graduates of technical schools, such as the Lawrence Scientific

School, Cornell, Columbia and the Massachusetts Institute can gain practical experience in mechanical engineering, where, to consider the matter from another point of view, the services of a high grade of intelligent pupils inure to the benefit of the company. It is a system full of possibilities. Already the American mechanic leads the world for all around efficiency: with any prevalence of apprenticeship systems such as this, the superiority of American over foreign mechanics would become almost overwhelming.

The Baldwin apprentices are divided into three classes. The first is composed of grammar school graduates, who serve four years—usually between the ages of 17 and 21—at wages of 5, 7, 9 and 11 cents an hour, and receive a bonus of $125 at the end of their period of service. They are obliged to attend night school three evenings a week, and study geometry, algebra, drawing and perspective, in order to be thoroughly familiar with the technical language used throughout the shops. The company, under contract to teach them the "art and mystery of a trade," provides that their work shall be changed with sufficient frequency to initiate each boy into all the details of his craft. The second class serve three years at 7, 9 and 11 cents an hour, and receive a bonus of $100. The apprentices of this class are high-school graduates, but they, too, are obliged to take the technical studies of the night school for a part of three years; and they, too, learn a trade. The third class—the graduates of technical schools and colleges—serve for two years, not as apprentices but as employees, at 13 and 16 cents an hour. Their education, of course, is taken for granted.

When the system is in full running order, there will be about a thousand of these apprentices, under the supervision of a well-known railroad man, Mr. N. W. Sample, formerly General Superintendent of the Denver and Rio Grande. Mr. Sample not only oversees the boys and looks out that their work is changed often enough, but he also has regard for their health, attends to finding good boarding places, and, with an eye to morals, fidelity and efficiency, picks out the deserving for promotions. And promotions are not infrequent. Any apprentice whose capability makes him stand out above his fellows is sure of recompense. Recently a Columbia graduate, after working a month under Mr. Sample's scrutiny, discovered that his pay envelope enclosed more money than his contract called for, and when he tried to have the error rectified, was told that his pay had been raised on account of his excellent work. This is a common occurrence; it is an essential part of the plan that efficiency shall be rewarded.

The result is that many of the apprentices exhibit a very pronounced enthusiasm; they know that the firm for which they work, with its immense plant, its nine thousand employees, its output of four complete locomotives a day, is composed of men every one of whom has risen to wealth and power from humble beginnings in the works, and with these rather remarkable examples of business success before them, they show no lack of energetic earnestness: whether sons of puddlers in the company's foundry or of Germantown bankers, they have a lively appreciation, in the words of Admiral Evans, of the value of thirty seconds. Moreover, they are thoroughly democratic; all classes mingle on terms of equality. One day last spring a boy who had been taken ill was accompanied home by his benchmate—both of them in their grimy overalls; and when the sick youth turned to enter his house, a luxurious mansion on Rittenhouse Square, his "buddy," who lived in a back street in Camden, halted in amazement. "Gee, Billy," said he, "Does your mother work here?" The apprentices are, then, typical American boys of all kinds; they will graduate from their apprenticeship, the company hopes, a race of capable mechanics and engineers, ready for leadership in any quarter of the world.

Only a few, obviously, will ultimately enter the works: if all became employees of the company the system would be paralyzed in short order; for in full operation the school—for that is virtually what it is—will send out four hundred finished mechanics every year. In twenty years this institution alone will have provided the community with eight thousand of these skilled workmen. Let other great industrial establishments adopt similar systems, and what will be the result? In case of strikes on a large scale there will be in existence vast reserve armies of trained men ready, if they desire, to fill at once even the most responsible places left vacant by strikers, some of whom, under present conditions, have a labor monopoly of the more complicated kinds of work. Extensions of the Baldwin plan, then, will have a decided economic significance.

Building Houses from the Top Down

IT is no uncommon sight in a great city to see a tall building constructed literally from the top down, the upper stories completed before the stone for the lower stories has even been shipped from the quarries. This curious phenomenon is due to the marvelous increase in recent years in the uses of concrete. Not only is the mixture employed for roadways, abutments, piers and sidewalks, but in the high buildings the foundations are made of it and the upper stories are moulded in it, even before the intervening courses of masonry are laid; pipes are made of it; bridges of concrete strengthened with steel—witness the new Goat Island bridge at Niagara—are growing more numerous; no forts are

built without it; tunnels and subways—the New York subway and the new East Boston tunnel—are concreted from end to end; and at Elizabethport, New Jersey, the Central Railroad is building shops, the walls of which are constructed by pouring concrete into wooden forms with spaces left for the windows. In every State engineering projects are going on demanding the use of concrete in work that ten years ago would have called for brick, or stone, or wood.

Trade has been affected by the new popularity of the old material. It has been affected notably. In ten years the production of cement, from which concrete is made, has grown with marvelous strides; and it is still growing. In 1891 American mills produced but thirteen per cent. of the cement used in the country; the two foreign firms, one English and one German, which were then the greatest in the world, with a total output of something over 1,000,000 barrels apiece considered that a sale of 500,000 barrels apiece in America was very successful business. Now an American firm is the largest in the world with a yearly output of 3,500,000 barrels, practically all of which is sold in the United States. Other firms bring the American production up to 10,000,000 barrels a year. From the thirteen per cent. of 1891 the home output rose to seventy-four per cent. in 1899, and at the present time so little cement is imported—and that because an unreasoning prejudice against American cement has not yet wholly died out—that it is easily offset by exports to South America, Australia, and the Philippines. "Eighty-seven per cent. of our cement," said a man thoroughly familiar with cement production, "we were obliged ten years ago to import. Today our imports are inconsiderable; the tide is setting in the other direction. Ten years from now, I venture to prophesy, we shall be sending eighty-seven per cent. of our total output abroad."

Every State in the Union is productive of cement, and so great has been the demand for it that since 1898 new mills without number have been set in operation in various sections. Insufficient knowledge of the process of production has been the cause of many failures—a number of mills in Michigan and several on the Pacific Coast were obliged to suspend—but the Pennsylvania mills have been uniformly successful, and in other districts the application of sound methods will no doubt remedy existent difficulties. Two companies have recently begun operations in California with good prospects. In the South there is some paying production. But for some time yet the Allentown district of Pennsylvania will continue to be the centre of the industry. The benefits of the new industrial manifestation will be widespread: the change from an unfavorable to a favorable balance of trade in cement is an indication of prosperity; the increase in the use of a cheap and durable building material means a growth in the wealth of the community.

"Lloyds"—Why England Holds the Shipping of the World

NO centre of business activity in this busy century is more important to the commercial interests of the entire world than "Lloyds" in London, and one might say also the social interests; and yet it may well be doubted if the average newspaper reader could state, in the most general way, what Lloyds is, although "Insured at Lloyds," "Classed at Lloyds," "Reported at Lloyds," are common phrases.

Lloyds cannot be defined; it is too far-reaching, too many-sided to admit of such summary treatment. Like a great personality, it must be seen from many view-points to be understood. Ask a Londoner where Lloyds is, and he might point you to a part of the Royal Exchange where the offices are—an immense place equipped with every known device for the keeping of records, and for handling and dispensing the information which is always pouring in from every part of the world. Should you walk through these offices and see the happiness some sailor's wife finds, when she is told that her husband's particular "Mary Ann," of all the "Mary Anns" afloat, had that day arrived safe in port, on the other side of the world, with "all well on board;" or inspect the immense volumes wherein a record of most of the ships on the seas is kept; or watch while some merchant is paid insurance on his lost cargo—if you should see all this, you might feel that you had seen Lloyds; and so you had, but not all.

Make a visit now to the office of some shipowner, and ask him to tell you of Lloyds. In reply he might hand you the paper he was reading as you came in, and, sure enough, in its headlines you would find the word "Lloyds." He might tell you that this paper, *Lloyds' List*, is the oldest paper in existence, except the *London Gazette*, and explain that in its columns is published a chronicle of the movements of ships in every quarter of the globe; that there one can find stories of collisions, arrivals, departures, captures in war, victories, defeats, ships spoken, ships launched and ships lost. Or your informant might suggest a trip to some shipyard nearby, where his steamer was undergoing repair and introduce you to Mr. ——, "of Lloyds." You would very soon discover that Mr. ——, "of Lloyds," was a very important character in that particular locality. You would be informed that the repairs then in progress on the steamer would not be considered as satisfactory until they had been approved by this gentleman, and

that it was he who would determine her "class at Lloyds;" and her "class at Lloyds" is a very important item in a ship's character, for on her standing there depends the amount of premium to be paid on the insurance on the ship herself and on that on her cargo as well. Perhaps you would be told that he had been made sole arbiter of all differences that might arise between the repairer and the owner in the course of the work.

Then, returning to his office, the merchant might give to you in brief the history of that particular steamer or any other ship afloat, from the laying of her keel to the present time, by reference to "Lloyds' Register of British and Foreign Shipping." This book could be called the "Social Register" of ships, and is of great use to every one interested in shipping or marine insurance. It is constantly employed by marine underwriters in fixing their premiums upon insurances affected by them on ships and cargoes; in fact, the rating it gives a ship is most conclusive evidence of her present condition as to repair and seaworthiness.

During the Forty Years' War, when it seemed as if English spirit must break under the succession of defeats that the English arms were experiencing on land and on sea, Sir Francis Baring, M.P., and John Julius Angerstein, two of the great names in the history of English commerce, suggested that the members of Lloyds meet and discuss the situation. It was the largest meeting in the history of the society up to that time, and was not equaled in the following seventy-five years. It was decided by this meeting "that, to set an example to the public bodies throughout the United Kingdom * * * * and to our fellow-subjects of every class * * * * independently of our individual contribution, the sum of $120,000 be appropriated for this purpose." "This purpose," they said, "was to hold out every encouragement to our fellow-subjects who may in any way be instrumental in repelling or annoying our implacable foe."

They sent out an appeal that "the mite of the laborer, combined with the munificent donation of the noble and wealthy, shall be the best pledge of our unanimity." When their work was completed the committee at Lloyds found that they had raised and expended $3,150,000. To Lloyds the English nation gave the credit of the "Patriotic Fund," and as much for the ability with which the Fund was expended as for the generosity of the society and that of the individuals among its members who contributed of their time and money to raising it. It is interesting to note here that similar work has been done by the Lloyds of today during the South African war.

It is the members of Lloyds we have to thank for the lifeboat, for it was their sagacity, foresight and generosity that gave Henry Greathead, the inventor of the first life-saving boat, an opportunity of proving the value of his ideas, and, having seen the possibilities of the boat, the committee at Lloyds managed the building and installing of these boats on the coast of England until at last their usefulness was fully demonstrated, and the National Lifeboat Institution assumed control of the system that Lloyds had established. It took Lloyds twenty years to convince the ministers at Whitehall that the lifeboat system was worthy of government support.

The articles of incorporation of Lloyds state the objects of the society to be: (1) Marine insurance by members of the society. (2) Protection of the interests of the members of the society in respect of shipping and of cargoes. (3) Collection, publication and diffusion of intelligence and information with respect to shipping.

"The Committee for Managing the Affairs at Lloyds'" have practically nothing to do in their official capacity with marine insurance. They merely regulate to some extent the methods employed by the members in carrying on their underwriting business.

Not all the members of Lloyds are underwriters. Men join the society for other reasons than because they are interested in marine insurance, although a majority of them are marine underwriters, and it is said that the society is custodian and trustee of over $14,500,000 deposited by members as security for their credit.

With regard to the second object of Lloyds, it has established an extensive system to protect the underwriters from fraud and to aid them in case of loss. A part of this system is the "Intelligence Department," which has been founded to carry out the third object of the charter. This department received last year 89,000 telegrams and 100,000 letters. It has agents on every coast in the world, and has established signal stations throughout the world to facilitate the aiding of vessels in distress and to secure early news of arrivals.

Here then is a corporation which has taken the world as its field of operation; that has made its name and its power a by-word on every coast; that is in touch through its agents with every port of the globe; that has tabulated the whims of ocean and tempest on its charts, or the causes of wrecks, and has measured and rated most of the ships afloat. Here is a corporation not the creature of a day nor the creation of a promoter, but an organization which has been evolved from the commercial system of England, and which, like that system, finds its beginnings in the usages of the Hanse merchants of the steel-yard and the Lombards of Lombard street. Here, also, is a corporation which men respect and honor not only for the power it wields in the

world of commerce, great as that power is, but also for what it has done in doing good to mankind.

A Week of New Inventions.

BETWEEN 500 and 600 patents are issued in this country every week, and the total number since the establishment of our patent system is close to 700,000. This vast number of patents stands plainly enough for a most impressive aggregate of improvements, chiefly of a mechanical character. It is interesting to make note of some of the most recent inventions.

Let us confine our attention for a moment to a single week—that ending on the 23d of last July. During that week there were patents granted on a combined talking and picture-exhibiting machine, on a machine for cutting articles from sheet material, on an overseaming and also an overedge stitching attachment for sewing machines, on a machine for filling cans and on a miner's lamp. By way of novelties ingenious men contrived a bowling alley pin with elastic air spaces around it, so that when a ball strikes it one hears only a dull thud instead of a crash; a machine for cutting green corn from the cob; a machine for ironing the edges of collars and cuffs or other starched articles—which ought to yield a fortune—and non-heat-conducting fingerholds for removing and elevating lamp chimneys, surely a necessary thing. Other things that were patented were a non-explosive oil can, a stay for tripods, a vaporizer for explosive engines, an automatic electric stop for elevators, a lock for cigar or other boxes, a device for washing carriages and a car fender with a cushion attachment.

One feels a kind of wonder at the sight of this list, which seems a thing of the imagination, a catalogue of the conveniences in a world created by a romancer. For instance, the bowling pins seem too good to be true. Then the machine for ironing the edges of starched goods, the non-heat-conducting fingerholds and so on! Mr. Wells, the fantastic novelist, never conceived better things than these.

They are real enough, however, and some of them are likely to meet with the success that they deserve on the market. But they represent only a small part of the inventions patented in July; and they are not any more unique than some of the others, than the closet door, for example, which is in reality a folding bedstead; or than the piano-violin, or the swimming shoe, or the non-refillable bottle, or the golf club in pieces, or the basket attachment for desks—an invisible waste basket. These and other odd ideas seem to fairly throng from the brains and fingers of our clever countrymen.

There appears, in fact, to be few big things occupying the new spaces in the Patent Office. There are plenty of coffee pots, ore-dryers, saddles, lifeboats and hat fasteners. And there is the usual number of cash registers, which seem to have attracted an astonishing amount of attention from inventors in all parts of the country, and motors and systems of electrical distribution and filters. Without these one would remark something missing from the *Official Gazette*. Occasionally, indeed, some entirely new thing appears—like the Murray page-printing telegraph, described elsewhere in this number; but, on the whole, as one might expect, the inventions are of the small, serviceable kind, to which every one gives a willing welcome.

The great inventors solved the great fundamental problems, but it does not follow that the inventors of today are small ones. One need only consider airships and wireless telegraphy to be convinced of that.

A New Link With Asia

A TRANS-PACIFIC cable has become a necessity, and the necessity for it will grow as our expansion in the East assumes its true proportions. National pride, too, now comes to the assistance of the project; for it is improbable that Americans can see Canada and Australia connected without entering into a rivalry. If two English colonies can be connected across the Pacific, why then surely American colonies and the United States can and must be. Work on the cable between Canada and Australia is already under way.

The result of the surveys of 1891 and 1899 was to reveal an excellent route. The first ocean stretch, according to these surveys, extends from Monterey Bay, California, to Honolulu—over two thousand miles. Fortunately, many of the difficulties of this stupendous distance are nullified by the contour of the ocean bed, which could not lend itself more admirably to the project. A curiously-formed natural lane, three hundred miles wide, and with no formidable currents or obstructions, offers a safe location for any number of cable lines. Westward from Honolulu the route deflects to the northwest to the Midway Islands, and then to the southwest to Wake Island. By following this irregular deflection it is possible to take advantage of a series of ocean hummocks, corresponding to telegraph poles, and to skip the tremendous depths south of the Midway Islands. From Wake Island the route proceeds to Guam in a stretch of 1,293 miles; and from Guam to Manila, 1,350 miles away. The route between San Francisco and Manila is altogether 6,807 miles long. It is, indeed, gigantic, but the benefits of a cable would be every bit as gigantic.

It is estimated that the cost of making and

laying the cable with equipments would amount to $8,500,000.

Just at this present time the Government would probably be most benefited. It now pays $2.25 a word on messages from Manila, which is only a slight reduction from $2.40, the regular rate. On particularly pressing messages, as, for example, the one announcing the capture of Aguinaldo, the rates run up as high as $7.10 a word. If the rebellion were to last forever a cable would be a superb investment for the Government merely from the point of view of saving tolls on military messages. And commercially a direct cable would be of incalculable benefit considering that commercial messages to the Philippines must now traverse the Atlantic, the Mediterranean, the Red Sea, the Indian Ocean and the Eastern shores of Asia. It is not, however, entirely a question of communication between San Francisco and Manila, but far more between the Great West and the Great East.

If there is any way to vitalize the Orient it is to connect it with our own electrically active and impulsive life. There are now 1,225 separate ocean cables, aggregating in length 175,000 miles of wire, yet there is no line across the Pacific. We plainly have an opportunity to confer on ourselves and on others a mighty boon.

The Value of a College Training

SO much has been said concerning the value of a college education that the following selections from a college student's letters possess a certain significance, though, patently, they give testimony regarding but a single isolated case. The student who wrote the two letters is a junior in one of the leading engineering schools of the country, engaged for the summer in an engineering office in the West. Both letters were written recently to a friend in New York City—the second following the first after an interval of a week. They are self-explanatory:

FIRST LETTER

"I have worked just one week now with so many practical difficulties to confront that I believe I am wide awake for the first time in three years. Chopping trees, pulling down fences, driving stakes in a sloppy and miserable marsh, I have little time to think, but evenings when I review the day's work, I wonder if there isn't a glimmer of sense in the opinions of these Schwabs and Colers who deny the value of a college education. From what I have seen, I do not believe that a man who goes into civil engineering as a profession, after four years at a Scientific School, is any better off than the man who goes into it as a trade, without any college education at all. Most of the men in our office are not college me
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college education: it not only gives a man a life that he could not have without it—even, I think, with millions—but it seems also to have a certain amount of very practical value."

A Museum for Social Reform

GENUINE philanthropists are far too thinly scattered among the rich of Europe, but all the same there are a few of them. In France, there was Count Chambrun, who died in February, 1899, and his particular line was to give freely towards an entirely new kind of philanthropic institution, especially beneficial to labor—the Paris *musée social* which he himself had called into existence. Apropos of the American Social Service League's intention of establishing a similar museum of social economy, information on the French model institution is interesting.

At the close of the Paris International Exposition of 1889, many voices were raised in favor of making sections 2 and 3 permanently useful. The proprietors of the exhibits presented them to the State, with the result that in 1892 a "Museum-Library of Profit-Sharing, Coöperation and Workmen's Unions" could be opened as the forerunner of a long-planned big Social Museum. In 1893 the government submitted to the Chamber of Deputies a bill in which the sum of 47,500 francs was demanded for preliminary expenses. When the bill was about to become a law in the spring of next year, the well-known humanitarian, Count Chambrun, suddenly offered to establish, entirely at his own expense, a Social Museum, on a large scale, and permanently to endow it. Of course, this generous offer was gratefully accepted, and already in March, 1895, the new and novel [illegible] was given over to its public destination at No. 5 rue Las-Cases, the Count's own elegant house. It disposed of 200,000 francs taken over from the former "Museum-Library," and the founder presented it forthwith with fixtures to the value of 1,500,000 francs, besides [illegible] an annual income of 100,000 francs.

According to the rules or statutes, the chief [illegible] is "to place gratuitously at [illegible] public, information, documents, [illegible] models, plans, statutes, [illegible] social regulations and ar[illegible] the elevation of the phys[illegible] of the working classes, [illegible] questions being ex[illegible] under the super[illegible] property of a "Social [illegible] most of the [illegible] members, Loubet, [illegible] among the rest. [illegible] contributions [illegible]

The principal means by which the Museum tries to attain its ends are the following: 1. A permanent exposition of socio-economic materials. 2. An intelligence department giving information on what is going on in the field of social reform and labor questions. 3. A very large public class library. 4. Expert advice. 5. Lectures and courses. 6. Deputations and commissions of inquiry and research. 7. Publication of periodicals, reports and books. 8. Foreign correspondents. 9. Distribution of prizes and medals. Under the heads 2 and 4 over 1,200 pieces of advice and information are given annually either by word of mouth or in writing. Besides, the *musée social* has entered into connection with all and sundry of the French workmen's unions, industrial and agricultural; it has even called into life several useful societies, and done much to help the working classes increase their power of combination. It has sent out delegates to all international and all French laborers' congresses, arranged for numerous investigations at home, and made the results valuable by embodying them in countless files of papers, reports, pamphlets, etc. It publishes a monthly containing quite a mine of important articles and notes; this organ is forwarded gratis to all interested in social questions who ask for it. We must not omit to mention that it has despatched abroad many missions to study all sorts of labor and reform questions according to a strictly scientific and impartial plan fixed beforehand. Really important works have been the outcome of these foreign missions, *e. g.* on the British trade unions, on the conditions of labor in the United States, Australia, Germany, etc., on Italian agrarianism and methods of credit and coöperation, etc.

The seven "sections" into which the Institution is divided are: 1. Agriculture. 2. Workmen's associations; coöperation. 3. Insurance of workmen. 4. Benevolent institutions, including profit-sharing. 5. Legal. 6. Missions, studies, investigations. 7. Permanent dealings with literary and other societies. A committee consisting of distinguished experts presides over each section. The *directeur-gérant* is Prof. Léopold Mabilleau, who is assisted by a secretary and three "delegates"—for Industry, Agriculture and the Press, respectively. A pretty feature consists in the arranging of "labor festivals," connected with awards of permanent annuities to worthy workmen, or of prizes to particularly meritorious laborers' unions. Further, three prizes of 25,000 francs each have been distributed, up to now, for the best new books on profit-sharing, workmen's and employers' associations, and labor insurance, respectively.

In the short period of its existence, Count Chambrun's creation has, it must be admitted, already accomplished plenty of highly profitable

work. Every sober inquirer into social subjects will easily understand the practical usefulness of such a centre of information and research. It is a pity that one important department is still missing there—a complete exposition of appliances for the protection of "hands" from accidents. Such a department, on the other hand, is all that is, for the present, aimed at by the similar institutions recently established elsewhere, or about to be founded, on a small scale. Last year an anti-accident museum was opened at Amsterdam, ten years ago in Vienna, this year in Munich, whereas next year one will be called into life at Berlin. Social museums on the many-sided Paris pattern are planned for next year in Budapest and Lyons. It is to be hoped that in due time Paris will add an anti-accident department, and Amsterdam, Vienna, Munich and Berlin may prosper sufficiently to be able to imitate fully the French model.

A School for Charity-Workers

OUR charitable organizations are no longer small, sentimental affairs; they are large enterprises that are business-like to a surprising degree.

Excellent evidence of this business-like character is to be found in the "Summer School of Charity," an interesting institution founded a few years ago by the Charity Organization Society of New York for the purpose of instructing students in the general principles of charity, and of firing them with energy and love for their work. During the latest session of the school there were several scores of students, coming from fourteen different States. In the first one or two sessions a good deal of the instruction consisted of practical work among the poor, many of the members of the school having been attracted to it by the opportunity of studying at first hand the complex sociological problems of a great city. But this practical work has been abandoned, and there is now little or no visiting. The students are supposed to have done enough of that sort of thing before coming to the school. In fact, persons desiring to be students must already have done a full year's work in some charitable organization or must have a University degree. The school is not a kindergarten.

The sessions, which last six weeks (a movement is on foot to prolong them to a year), consist of morning meetings where there are lectures and discussions. Among those who lecture are Jacob A. Riis, Edward T. Devine, Professor Samuel McCune Lindsay, of the University of Pennsylvania, Dr. Charlton T. Lewis, Frank Tucker. James B. Reynolds, the Rev. Dr. William R. Huntington and John W. Keller, all of whom are special students of the problems of charity. Besides these well-known authorities, there are others who come from various cities in order to present the particular difficulties they have encountered. The study of particular, well-defined phases of the general subject is, by the way, one of the methods of the school. Each student takes some such phase and devotes the greater part of his time to it. Among the topics chosen in this way during the past summer were: "Conditions Among the Negro Population in New York City," by a young lady from Virginia; "The Part of the Church in Charity Work;" "Homes for Working Women," by a lady from Massachusetts; "Report Upon a West Side Tenement Block," by a gentleman from Wisconsin; "Municipal Care of Vagrants;" "The Savings of the Poor;" "The Education of Emmigrants," etc.

The first three weeks of the session are set apart for a study of the treatment of needy families in their homes. This is fundamental, since wherever any working system of charity exists for any length of time thousands of families are treated. The Charity Organization Society of New York, for example, has 90,000 records of families that have been under its care—not individuals, but families: parents and children. After this subject has been thoroughly examined a week is devoted to studying dependent, neglected and delinquent children. A delinquent child, it may be explained, is one that lacks some of the essentials of good conduct, one that practices petty thievery and so on. Following this week two days are spent in discussing medical charities, four more are given to the subject of the institutional care of adults and three more to the subject of neighborhood improvements. This curriculum thoroughly embraces the entire subject of charity.

The above outline of the school will give an idea of the work done in it. The striking point is that there should be any such work done at all. And yet one wonders, on second thought, why it is not done on an incomparably larger scale, considering the skill that should be used in the administering of charity if charity is to be effective. Those that are engaged in the work at present are, happily, uncommonly able. Mr. Frank Tucker, of the Society for the Improvement of the Condition of the Poor, recently said:

"People of superior intelligence are the ones now entering the field. There are really a large number of young men and women just out of college who become charity workers just as other people become professional or business men. Charity no longer consists of carrying around bread in baskets; it is an intricate sociological study that engages quite as much ability as other better-known things engage."

And the field, it is clear, is as wide as the world. If there are 35,000 dependent children

cared for in institutions in New York State, how many children are there in Peking or London or Chicago, or in any great city, or, much more, in any great state or country that require such care without ever receiving it or the hope of it? The organizers of aid societies must for the present spring up unaided from the soil that creates the need for them, for as matters now stand the Summer School of Charity just described is the only training place of its kind in the world. Fortunately it is prosperous and, more fortunately still, there is a likelihood that it will expand.

Making Farms and Orchards

IT has been said that the farmer has become, in the last few years, both scientist and business man. In the West he has become engineer as well, for there he must make his farm first and cultivate it afterward. There is a section, in area over four-tenths of the total area of the country, leaving out Alaska, in which agriculture under normal conditions is an impossibility —a section where the rainfall is less than half of the normal in the Eastern States. The first move necessary was to make rain, which they have proceeded to do—with a spade.

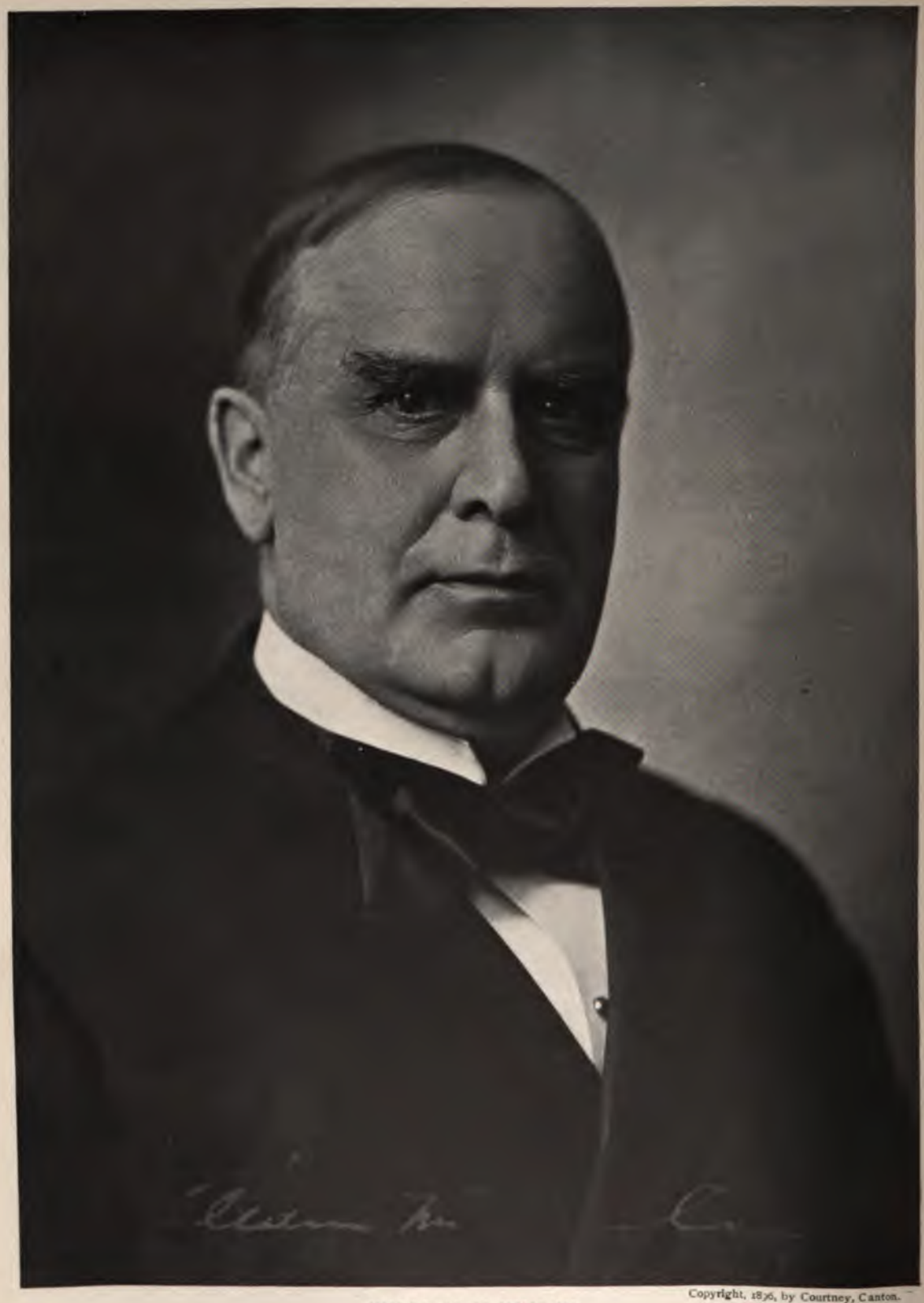
Many striking results have been achieved. The Mormons built a rich and powerful state with an irrigating ditch as a foundation. Thousands of irrigated farms dot what was once known as "the great American desert." Fifty years ago Southern California produced nothing but mesquite and cactus, and now it is a garden of beauty and prosperity. Thirty thousand cars of oranges and lemons are shipped from it across the continent yearly—fruit that competes successfully with the best that can be imported. Land that brought a dollar an acre is now worth thousands of dollars.

Men who would not allow themselves to be called old have hunted buffalo where now stands at Rocky Ford, in the Arkansas Valley of Colorado, one of the largest beet sugar factories in the country, surrounded by miles of irrigated farm lands. Each year from five hundred to eight hundred cars of cantaloupe are shipped from this section. From this valley were sent this year three hundred thousand head of sheep, fed on the thousands of tons of alfalfa which irrigation causes the desert soil to yield abundantly. To the east, near the Kansas State Line, is the largest irrigation system in the country, and next to the largest in the world. It is just completed at a cost of over a million dollars, and is capable of irrigating two hundred thousand acres of land. It consists of five storage reservoirs covering thirteen thousand acres and seven canals with a total length of three hundred and eleven miles. The subsidiary ditches add two hundred miles more. This entire system has been lately transferred with one hundred thousand acres of land to a beet sugar company. This company proposes to settle the lands with beet growers and build a sugar factory at a certain point on the Atchison, Topeka and Santa Fé Railway which runs through the valley. Records have already been made with beets raised for the Rocky Ford factory, and the land throughout the section is remarkably adapted to beet growing.

The development of this valley was slow until the last few years. The railroad, seeing possibilities in the section, began to give practical and material aid and things matured more rapidly. Beet culture was begun, the present sugar factory was built, lands about Rocky Ford advanced from twenty-five dollars to two hundred and fifty dollars an acre, values which are not excessive in view of the net returns to the cultivation. No agricultural section in the country, except Southern California, has a higher average net yield per acre, or a lower percentage of failure. This valley, with its thousands of prosperous farmers, its miles of orchards, its hundreds of thousand head of live stock, its sugar factory, which will produce this year fifteen thousand tons of sugar, with another large factory in prospect, was a barren desert a few years ago.

There are over one hundred million acres of irrigable land within the arid region yet to be reclaimed. This land has not soil elements. Government experts have, by thorough surveys, found that there is water supply to reclaim ninety-five per cent. of it. Government land is becoming scarce, but the vast tract still remains, each forty acres of which under irrigation is said to be capable of producing a surer competency than one hundred and sixty acres in the East. It will not be re-made in a moment, but the fact that it will be done eventually means much for the future. The Government will undoubtedly be forced to lend a hand, and why not? Is not Egypt constructing on the Nile the largest irrigation work ever attempted, at a cost of twenty-five million dollars?

The section is not only a tenantless waste of what might be good land, but it threatens with drought every summer, just as it did in late July this year, the well developed farm country bordering upon it. The hot winds that blow across these arid plains to the fresher country beyond have a devastating effect upon land which otherwise is healthy and fertile, and the barrenness of the desert extends its bad effects far beyond its own limits. The reclaiming of the arid country means, therefore, not only the making of good land from waste but, as well, more regular crops from the surrounding country.



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WILLIAM McKINLEY

"The period of exclusiveness is past"

THE WORLD'S WORK

OCTOBER, 1901

VOLUME II NUMBER 6

The March of Events

THE assassination of President McKinley on September 6th was the most unnatural and loathsome crime in our history. It did not rise to the intelligible level of the murder of either Lincoln or Garfield. Lincoln was the Civil War President, and Garfield was President in the period of spoils. It can at least be understood how the turbulence of one time and the personal disappointments of the other wrought upon the morbid and criminal tendencies of Booth and Guiteau. They felt personal resentments. But the assassin of President McKinley had as his provocation only a wretched "philosophy," of foreign birth and nurture, which was directed against "rulers," not against any individual. His crime is the most foolish, too, as well as the most cowardly in the annals of anarchy. Even if assassination could change the government of a monarchy, it could have no effect on the government of a republic like ours—except to strengthen the patriotism of the people and to entrench our institutions deeper in their esteem.

The tragedy is the sadder because the President who was murdered was the most popular and highly respected ruler in the world, and by a malign coincidence he was cut off just when the rich results of our broadening national life were giving his Administration a far more generous breadth than any recent Administration had known. For President McKinley stood for a distinctly new era. He was the head of the State at the happiest time in our history, when a completely reunited nation had forgotten its partisan wrangles in taking the industrial leadership of the world, and when our horizon and influence were widening as they had never widened before.

He was peculiarly fitted for leadership at such a time, better fitted, we now see, than his opponents had ever confessed and even than his friends had foreseen. Mr. McKinley grew up into public life in the narrower era that followed the Civil War, at a time when all our political activity was a bitter domestic wrangle. But, more sensitive to the broadening influences of later events perhaps than any other public man of his generation, he felt the nation grow and he grew with it. Indeed, his capacity for growth after middle life has few parallels.

It was a dramatic conjunction of events that on the very day before his assassination he formulated a national programme so broad and generous that it disarms even partisan opposition. He had outgrown the political policy that he had championed in his earlier career and he fashioned out of a larger oppor-

tunity a policy that is national. When he declared that "the period of exclusiveness is past," he struck a note that was heard in every civilized capital and in every mart of the world. It is a concrete programme and a definite one—reciprocal trade treaties, more American ships, an isthmian canal, and more compact pan-American relations. Every item of it concerns other countries as well as our own. His is the new era of international relations and of tasks of diplomacy.

How fast we have traveled in our political development may be seen by recalling the period of mourning for Garfield and the comments that it provoked at home and abroad. The whole land was grief-stricken then as it is now. American citizenship felt outraged then as it feels now. The sympathy of other nations was felt for us then, as now. But in the comment at home and abroad Garfield did not stand for any large national policy or movement. He was the worthy head of a great nation, and that was all. Our politics and policies were domestic and concerned nobody but ourselves—they concerned few persons, indeed, except the professional politicians. We have come a long way these twenty years between Garfield and McKinley.

The winning personal qualities of the dead President, which had always bound his friends strongly to him, became evident to the whole people after his second election, when his policy was so generally approved that party animosity almost died away. He was now past the temptations of personal ambition. He disclaimed a wish for a third term and even a willingness to accept it. He made a transcontinental journey to meet the people and to get their point of view. He took delight in seeing them. He made many short addresses, cheerful and full of earnestness, rising always to a broad view of our national life. He gave evidence of his own growing thought as the nation had grown under him. There was nothing spectacular in his demeanor. He was heartily glad to meet his fellow citizens. The natural kindliness of his nature was understood, and his domestic tenderness endeared him to a home-loving people. Public men, too, found him generous-minded and devoted to the country's welfare. All the members of his Cabinet but one kept their portfolios in his second Administration, some of them at great personal inconvenience, and they held him in the highest esteem as well as in admiration for his leadership.

The manner of his death and his demeanor after he was shot threw a beautiful radiance over his character. At his own suggestion he was holding a public reception and he was shaking hands with all who came, when the assassin shot him. His instant thought was of his wife. Then he asked that no harm be done to the assassin; and he expressed regret that his presence had caused inconvenience to the exposition. This was the conduct of a gentleman, as Sir Philip Sidney was a gentleman. The personal affection as well as the hearty admiration of the whole people went out to him. To the indignation at the outrage on American institutions was added a keen and universal personal sorrow.

President McKinley was more fortunate in the events of his Administrations than any of his predecessors, except Washington, under whom the Government came into being, and Jefferson, under whom it became continental, and Lincoln, under whom it was preserved. By virtue of the important chain of events, of which the Spanish War was the unexpected beginning, and by our swift rise to industrial supremacy, which occurred during his terms of office, he will stand as one of our historic Presidents. He gave political direction to a great national movement; for the nation has grown more in thought and in character these five years than it grew in the preceding thirty. His character and his temperament fitted him admirably for the political guidance of a nation in expansion. How well he guided it we can hardly yet measure. But our increasing strength and more compact union at home and our growing influence abroad are parts of the eloquent testimony that may already be cited.

PRESIDENT ROOSEVELT

THE futility of assassination in a republic could not be more conclusively shown. If the President that is dead stood for the expansion of American influence and was himself American to the core, so also is the President that lives. The Republic has no citizen of a more courageous patriotism than Theodore Roosevelt.

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THEODORE ROOSEVELT

He comes to the great office in the saddest way by which it could be reached, the unexpected way through a keen national bereavement. The taking up of the unfinished work of an Administration thus cut short presents peculiar difficulties, but it has also certain advantages. He is unhampered. He has not even the obligations that a party election is usually interpreted to imply, and he finds the country freer from party strife than it has been since Washington's first Administration. For these reasons, as well as on his own account, the new President has the right to claim the loyal support of the people of every section and even of every party. Although he comes through the door of chance, he has abundant evidence of popular favor. If Mr. McKinley became the most popular Chief Magistrate that this generation has known, Mr. Roosevelt is, in his own right, the legitimate successor to this distinction. No man has more devoted personal friends, whom he has won by a rich personality and a generous nature; and no other man in the country has, perhaps, so large a personal acquaintance. Those who know him best regard him as equal to the highest and gravest responsibilities in the world.

And he is the most interesting figure in our public life. He is almost the only American citizen of recent times who from the highest motives has from his youth given himself wholly to the public service. He has made it a career, having no other profession. At the age of forty-three he has already had an experience that is unique in our history, which is so full of unusual careers. Before he became Vice-President he had been a member of the Legislature of New York, a member of the National Civil Service Commission, a Police Commissioner of New York City, an Assistant-Secretary of the Navy, a Colonel of Volunteers, and Governor of New York; and in every one of these widely different offices he did noteworthy things. A large volume of positive achievement—positive always—stands to his credit. He is a gentleman of the true democratic kind, who by his broad human sympathy is at home with earnest men of all social types; he is an educated man, a lover and a writer of books, the only writer of non-official literature that has come to the Presidency since the days of the cultivated Fathers of the Republic; he is a manly sportsman, the only President perhaps who could fill the White House with trophies of the chase as well as of war; and, above all, he is an unswerving believer in American institutions, American character and American leadership—a courageous man who loves the truth, an outdoor life, good books, his own fireside, and his country—all with the energy of a robust nature. And the dominant note of his character is earnestness. All these qualities make a man very much out of the common, even of Presidents.

The moral earnestness with which he has always taken his official duties—the earnestness, in fact, with which he regards the obligations of citizenship—has made him as conscientious a public servant as we have ever had; and, as graver and graver tasks have fallen to him in his rapid advancement, he has become as conservative in making plans as he is energetic in executing them. Still he may be depended upon for action; and those who prefer a figure-head for President, if there be such, must now forego their preference; for where he works things come to pass.

His energetic nature, tempered by the gravest responsibilities, is surely a fit and hopeful equipment for the further development of the political programme that was wrought out under President McKinley's guidance. His temperament is in keeping with the active era of the Greater Republic; and the deep seriousness of his character, with the high duties that await him. A strong personality working under the most solemn responsibilities—this is a conjunction of man and conditions which shows that our rough party machinery has, once more at least, provided such a succession in the Chief Magistracy that a crime which has shocked the world does not jar our institutions in their steady course.

IN BEHALF OF THOSE IN AUTHORITY

DURING the Philippine insurrection a group of public journals that are read by educated persons denounced President McKinley almost daily as a falsifier of official reports, as a destroyer of our liberties, and as a man who wished to strengthen his authority at home by military rule. When our troops were sent to China some of these journals declared that the President's aim was to seize Chinese territory. A considerable part of the educated public which has little direct knowl-

Photographed for THE WORLD'S WORK by Frances Benjamin Johnston

ELIHU ROOT, SECRETARY OF WAR

edge of public men and of public affairs was misled by these journals into a feeling of bitter hatred to our Government.

Just at this time a visitor at the White House asked one of the President's executive staff how the Administration regarded such "criticism."

"It is taken for granted and ignored," he said. "What else could we do? But," he presently added, "it presents a curious problem to me. Here are four papers (and he named them) edited by educated men who must wish their country well. Every one of them might any day see the President or any of his official family. They would be heartily welcomed; for the President and the Cabinet, to say the least for them, are surely trying to do their best with these new problems.

"But instead of coming here or sending here and getting the Administration's point of view, instead of making practical suggestions, if they have any to make, they continue to pour out personal abuse. They repeat erroneous conjecture and disproved rumors. They suspect every official utterance. If they were the avowed enemies of their country their actions could not be different.

"These same journals, too, constantly express a loathing for 'yellow journalism.' But there is a most respectable section of society which feeds upon worse misrepresentations of our political life than that section which reads the yellow journals.

"It is strange, too, that these editors do not understand that they bring themselves into utter contempt in official circles. No man in the Government would pay the slightest heed to anything they say. They have thrown away the helpful force that they might have had. They can have no influence on any official. They can have no weight in shaping public action. They are regarded simply as common scolds."

This was said by a man who did not speak from a partisan point of view. "The same thing went on," he added, "in Cleveland's time—the same thing from several of the same journals. It seems to me a kind of insanity—to think that by the constant abuse of an Administration you can make it do what you wish it to do."

Now, before this kind of journalistic injustice begins again, it is proper for every respectable citizen, whether editor or reader, to remember that President Roosevelt is a frank and approachable man. Any responsible person can see him face to face. He will welcome sincere advice. He will listen to any respectful suggestion. He is always grateful for frank speech. So also is practically every man in the Government's service.

Is it not more manly to help than to tear down? Why should our over-worked public servants be denied the reasonable treatment that would be given to the commonest man in private life? In considering political morals, this inquiry deserves some thought; for the American quality of fair play, which holds in everything else, will soon again be forgotten—forgotten in politics even by men and journals who esteem themselves guides to the best citizenship—forgotten to the detriment of national character and dignity.

The bearing of our public servants is simple and their attitude of mind is receptive. The attitude of the chronically "anti" press —anti-everything—is haughty and suspicious. Here is an interesting paradox in republican society.

THE ILL-ADVISED STEEL STRIKE

THE strike of the steel-workers was a mistake, and it has been badly managed. The reason for a general strike was not sharp and clear. It did not have the spontaneous and hearty approval of any considerable number of workmen. It was not a movement to redress an injury. It was not for higher pay, nor for shorter hours, nor for any such reason. It did not come from an impulse of the men who work. It was only what may be called a move in the politics of labor. The officers of the Amalgamated Association wished to extend its membership in mills which were non-union mills; and this was all.

The Amalgamated Association was weak in membership. It had not grown appreciably for seven years. It had not regained the strength it had in 1892, when the Homestead strike took place. Then it had 24,000 members. Now it has less than 14,000. The managers of the strike thought that the time was favorable to increase its roll and its area of influence, because (so they seem to have argued) the United States Steel Corporation would not dare risk a fight. That this was Mr. Shaffer's state of mind is clearly indicated by the circular that he sent out after his suc-

cessful controversy with the Sheet Steel Company in the spring, when he secured the reinstatement of men who had been discharged from the Wood mill at McKeesport. He then said:

"The victory is with us, but not because of our strength. We won through their weakness. The United States Steel Company is today but a collection of bodies without organic form, without rules of government, without systematic operating plans. The difference between their actual possessions and chartered capitalization is backed by no value in plants or structures of any kind. It must receive value through purchase of watered stock by individuals who are not on the inside and who become the prey of the favored on the inside as well as of the broker and speculator.

"Foolish as these buyers are, we know they would refuse to expend money for stock which carries a strike with it. This is why we won. The declaration of our intention to strike affected the sale of their shares to the amount of $1,000,000 in a few days in Wall Street alone, and interfered with the exploitation of its stock in London."

Reckoning thus on the supposed weakness of the Steel Corporation, the aim was to bring all the mills under union control.

"Against the trust composed of money, influence and power," he continued, "let us array the united iron and steel worker in a trust composed of brains, skill, experience and mental and muscular strength." It was simply a plan to bring the biggest employer to terms—to whip Goliath.

HOW STRIKES STRENGTHEN GREAT CORPORATIONS

THE Steel Corporation and its constituent companies were keeping their contracts with their workmen. There was no provocation to strike that did not exist last year before the Steel Corporation was organized—except the fact that the Amalgamated Association was losing lodges and losing members under its present management. The fight, therefore, was lost on the day it was begun, because it was not a fight of earnest men for a purpose that called forth their whole moral strength, but a fight by the managers of a union simply to win membership. Such a purpose forfeited the public sympathy and the spontaneous enthusiasm of the members of the union itself. In a word, the strike had no moral backing. This ill-conceived attack on the Steel Corporation has given the S[illegible] Corporation the last thing in the world, perhaps, that it ever reckoned on having—public sympathy.

And public sympathy for it comes simply from the sense of fair play. The sense of fair play is the strongest impulse in American life. As between workingmen and men of wealth, when a contest is provoked by men of wealth, the public sympathy is always with the workingmen. Lowell remarked in his essay on Democracy that we need not have any especial concern for wealth, because wealth always finds a way to take care of itself. The well-being of the working masses is really the only subject of deep social concern. It is particularly unfortunate, then, when a body of skilled laborers are misled into a contest which discredits their organization.

If great organizations of industry be hurtful to the public welfare, so much the more unfortunate is a strike like this; for it is likely to prove that the greater the corporation the stronger it is in a contest with labor. It has a whole arsenal of weapons that a smaller company cannot have. It has more money. It has more mills. It can move its mills and turn prosperous towns into stagnant villages. It can fight in more places and in more ways than a small corporation; it can longer endure a siege, and it can make it harder for the labor union after the fight is over. The outlook now is that Mr. Shaffer will have given greater encouragement to colossal industrial organization than any man of the time, except Mr. Morgan.

THE INHERENT WEAKNESS OF LABOR UNIONS

THE strike gives renewed emphasis to the inherent weakness of labor unions in their present stage of development, especially in the United States. This weakness is that they put every workman on a level with every other one; and that level must be the level of the mediocre man and not of the strong man. A capable and ambitious worker must take and keep the pace of the duller and slower one. He may not work longer hours, he may not receive larger pay, he may not regard his work as the primary thing in life for him—he may not go at it nor keep at it in the spirit of self-forgetting enthusiasm that is necessary for the accomplishment of any task nobly and for the attainment of distinction. He must work in the spirit of the duller and less capable man.

Here is a direct conflict with the true spirit of democracy. In a democratic society the matter of the greatest importance whatsoever is that every man should have a free chance. He must be unfettered. He must have elbow room. He must have opportunity to show what is in him, to develop himself to the utmost and to win all that he can. This is the very essence of democracy. But the labor union puts him in a class and forbids him to rise above it in skill, in work, in reward. This result is the very thing that the American social and political theory was established to prevent.

It may not be possible ever to reconcile a labor union with the spirit of a democracy. But until a way is found the union will remain crude and unnatural. It can never do the workingman the full service that it aims to do, and it will continue without the membership of the ablest workmen.

To a considerable degree in those labor unions where wages are paid by piece-work this inherent objection is obviated; and this is the case with the skilled workmen of the Amalgamated Association. The wage scale agreed on is the minimum wage. Greater efficiency gets greater pay. In such cases this general objection does not hold good. But the stronger man yet has his fortunes more or less bound up with the weak man's in a general way.

The work that a man grows by and rises by is never routine work, is never the same work that every other man does, but it is that excess of skill, or of enthusiasm, or of product, which puts him ahead of the crowd. Any organization or agency that forbids this excess of skill, or of enthusiasm, that represses initiative and turns a man into a mere machine, goes square against the grain of American life. Great leaders may save labor unions from this inherent weakness by turning their development in other directions; but great leaders will be required to do it.

It is to be hoped that they will arise, for the labor union has a possible service to society so great that it ought to do it. Employers, especially impersonal and non-resident employers, cannot be trusted always to deal fairly. No class can be trusted always to deal fairly with any other class. And the unions have a real reason for existence. They are necessary, and it is unfortunate that they yet have this inherent weakness.

The results of this strike to the labor unions are unfortunate, as the results of bad leadership always are. But one result seems likely to follow that may be fortunate. Since many of the men who went on the strike directly broke their contracts with the employing companies — notably the Western lodges of the Amalgamated Association—it was reported that the officers of the Steel Corporation declared that they would make no more contracts with the organization unless it assumed a responsible shape. This brings up at once the old moot question of the incorporation of unions.

If they could sue and be sued—a position that they have almost always shunned—they would take on a character that they have never had, and they would be forced to more conservative action. Their irresponsible nature has been the chief cause of the low order of leaders that they have developed; for no other modern organization for any purpose has so suffered from incompetent leadership as the organization of labor. Of course, capital has found able leaders. So has education; so has the Salvation Army; so has almost every other "cause." Yet no other group of men has had such bad leadership—except perhaps the Prohibitionists. The labor union in its present irresponsible stage of development too easily becomes a mob, or disintegrates in time of trouble too easily to command the best executive talent.

Recent decisions in England that unions must accept financial responsibility for the actions of their officers are provoking much discussion. The fear that English labor leaders as well as American has been that a union would not in fact have an equal chance in the courts with employers; and no union could hope to attain the financial strength of any one of the greater corporations. Since the public sympathy is much more ready to be extended to the laboring man, if he have a good cause, than to the capitalist, such a fear seems unwarranted in the United States. The gain in dignity that incorporation would give and the conservative influence that responsibility would bring would produce abler leaders.

THE RESULTS OF NEARLY 15,000 STRIKES

THE open warfare between Capital and Labor has been an extraordinarily destructive one, as the statistics of the Department of Labor show, during the thirteen

and a half years from January 1, 1881, to June 30, 1894. The open struggles cost more than $285,000,000. It threw 3,714,406 persons out of employment by reason of strikes, each striker losing an average of $44; and 366,690 by reason of lockouts, each person locked out losing an average of $73. But averages are unreal. They are based on short and long strikes together, and a more vivid impression of the unavailing struggle is given by their frequency. During this period there were in the United States 14,390 strikes in 69,167 establishments. That means that the fight was as widespread as it was mischievous. Chicago suffered most, as far, at least, as the number of establishments involved is concerned. The most vexed industries were the building trades, in which 26,860 establishments were involved; then the following in order: coal and coke, tobacco, clothing, food preparations, metals and metallic goods, transportation, stone quarrying and cutting, boots and shoes. All these industries, it will be observed, are those to which internal conflicts are most natural. For instance, in a piece of work in which the building trades are concerned—a house—it seems almost foreordained that from the sensitive and jealous relations between union and non-union plasterers, plumbers, carpenters, bricklayers and stonecutters, trouble should arise. Not less than sixty per cent. of all the strikes that occurred were ordered by organizations, yet these organizations paid only about one-thirtieth of the entire loss in dollars. Of the total loss of $285,000,000 caused by strikes and lockouts, two-thirds was borne by the men and one-third by the employers.

All this desperate fighting did little but leave unhealed wounds behind; Strikes succeeded in forty-four per cent. of the establishments affected; and they failed in forty-four per cent. In the rest it was a "drawn battle." In the whole movement the strikers have advanced in wages and in some cases in shorter hours, but not often in securing greater advantages for the unions.

THE GHOST OF TARIFF REFORM

THE drift of politics (so far as any drift is visible that gives hint of the next Presidential campaign) reveals two tendencies —a tendency in the Demo [illegible] avoid a repetition of the [illegible] form and a renomination o candidate. Free silver and Mr. Bryan are of the past. No Democratic State convention this year has committed itself to the old programme, and some of them have openly repudiated it.

The other tendency is to revive the tariff issue. This is the one way, the Democrats are beginning to recall, that led to the only victories that they have won since the Civil War. On the Republican side, too, there are indications of a growing difference of opinion about protective duties. It is becoming more and more probable that, when Congress meets, it will face a demand for tariff revision that will force a discussion which may at least have important political results.

The Boston Home Market Club and the Manufacturers' Club of Philadelphia form a sort of old guard around the banner of high protection; and the resolutions passed last summer by the National Association of Manufacturers strongly in favor of reciprocity treaties called forth from the Philadelphia organization a counter declaration which forebodes earnest discussion.

The situation seems to be that the high-tariff leaders would welcome only such reciprocity as is not so reckless as really to reciprocate; and Senator Hoar's plan for "a reasonable reciprocity by admitting from other countries what they can produce and we cannot, and sending to other countries what we produce and they cannot," has a similar Pickwickian flavor, since nearly all the important articles we import but do not produce are already on the free-list. The followers of President McKinley want no tariff tinkering," but real reciprocity, as indicated by the treaties already communicated to the Senate. Another wing of the Protectionists is represented by Mr. Hepburn, who declares that he and his constituents see nothing sacred about the Dingley Law, and consider it a grievance "to have foreign customers furnished at a lower price than they with the products of American protected industries"

Mr. Babcock and his friends stand resolutely for putting the raw materials used by trusts on the free-list. This programme will have the support of many moderate Protectionists, of the Democratic tariff reformers, and of the enemies of trusts in general. It may not [illegible] d to definite legislation, but it has power to provoke an incalculable amount of [illegible] al discussion.

It is now too late, if it ever were possible, to oppose the principle of combination. It has been applied to most of our industries. But the coming of gigantic consolidations and the rise of the United States to the industrial leadership of the world have made the old argument of the "infant industry" somewhat obsolete. It is for this reason chiefly that the tariff-reform ghost is not likely to down at anybody's bidding.

SOME PARTICULAR TARIFF TROUBLES

THE tariff complications are made the worse, as they have always been made, by sugar; and now especially by sugar from Cuba and Porto Rico. The Sugar Trust would have raw sugar from Cuba come in free, but would levy a duty of half a cent a pound on the refined product. The beet sugar manufacturers of course see "assassination" in this proposition. They would admit refined sugar free and put a half-a-cent duty on raw sugar.

Meantime if all duties were removed Cuba would soon feel such prosperity as it has not known since the days of its millionaire planters. American capital would find investment in sugar plantations to even greater amounts than they have already found it. Cuba will, of course, clamor for such a chance, fortified by the increasing American interests there.

But we already have free trade with Porto Rico, and it is inevitable that there will be a great stimulus given at once to sugar production there. The island, as soon as it finds out its proper industrial policy, as local legislation affects it, will probably enter upon such an era of prosperity as it has never known. During the twenty-five years that practical free trade (by reciprocity) has existed with Hawaii the production of sugar there has grown to twenty times its former size; and with the enormous difference in accessibility the record in Porto Rico should be even more favorable.

Sugar or no sugar, the general proposition holds that our expansion of territory and of trade brought changes that were not dreamed of when the Dingley Act was passed. It may not be literally true as one distinguished free-trader told President McKinley just after the battle of Manila—"Mr. President," said he, "I congratulate you on the prospect of your going down in history as the great Free-Trade President, for Admi
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The nerve centre of annexation, therefore, is the commercial interest in the island. Certainly, when you scratch an American Annexationist you will find a promoter or an investor.

BARBARISM AND HEROISM IN THE SOUTH

A NEGRO murdered a white woman near Winchester, Tenn., and on August 25 he was burned by a mob of 2,000 persons. "The procession," said the Nashville *American*, of August 26, "was over a mile in length and bristled with shot-guns and winchesters." A part of the same newspaper's report follows:

"Mr. Moore mounted a stump and said that he came as the representative of the dead woman's husband and father, who did not want any brutality enacted and had requested that the Negro be hanged instead of burned. The speaker was howled down by the mob.

"Ed. Baker, a brother of the murdered woman, then mounted the stump and said that it was his sister who had been murdered and he wanted the Negro burned. Will. Baker, another brother, also made a similar statement and there was wild yelling by the mob.

"'Burn him,' was the cry. A dozen men then began gathering dry saplings which were piled around the tree. A number of men caught the prisoner and bound him to the tree with chains, one chain extending around his neck and the other around his body. Some then came forward with a five-gallon vessel of kerosene, which was poured over the body of the wretch and on the fuel. The Negro never moved or showed any signs of breaking down during this ordeal.

"A number of men scrambled over each other for the privilege of lighting the funeral pyre, and a number of matches were applied. The Negro remained stolid until the flames enrapped his body, then he shrieked with pain.

"It was the intention of the mob to burn the victim slowly, but the rapid work of the flames thwarted this and he was dead in about three minutes. Groans were heard until the flames had burned away the lips.

"There were deafening yells from the mob while the wretch was burning. Members shouted that was the fate of all committing such crimes. The crowd then began dispersing and in about an hour there were only a few on the scene. The body was burned to a crisp, nothing remaining but the trunk.

"After the fire died down there was a rush for souvenirs. The chains holding the charred body to the tree were cut off and the links divided out among those present. One man took out his knife and cut out two of the Negro's ribs, which he took with him. The ropes with which the Negro was bound were also cut into fragments and divided among the men.

"After the body was taken from the tree, it was placed on the burning wood and was left in the smouldering mass. It had not been removed to-night, and was almost completely burned.

"There was no effort on the part of any members of the mob to disguise themselves."

This is a depth of cold brutality that has not been reached in any civilized land in modern times. Indeed the degradation of a community can go no further. It has now reached the uttermost depth; and, happily, there are signs of a return to civilization.

One such sign are the following words from a sermon by the Rev. Quincy Ewing, of Greenville, Miss., who took as his text the Sermon on the Mount and the Constitution of Mississippi:

"The same essential spirit is dominant in Mississippi—in Mississippi of the twentieth century—that was dominant in Europe in the Dark Ages—that ruled in France more than five hundred years ago, when pious Louis canceled a third of the claims held by Jews against Frenchmen for the benefit of his soul; that ruled at Verdun where the Jews, mad with agony, huddled together in a tower of refuge, hurled down their children to the howling mob, hoping thus, vainly, to satiate their greed for Jewish blood."

A still better sign of a return to civilization is that a Southern sheriff, named North, at the risk of his life, fired into a mob that came to take a Negro from jail. Joseph Merrill, a Georgia sheriff, did a similar action, with a similar result; and Sheriff Kyles, of Tuscaloosa, Ala., drove away a mob by threatening to shoot. And these are only a few cases among many.

Governor Candler, of Georgia, sent a large force of militia to protect a threatened prisoner from a mob. Ex-Governor Jones of Alabama pleaded before the State constitutional convention for the removal and disfranchisement of any sheriff who permitted a lynching. Most effective of all, men have been tried and convicted for lynching and sent to the penitentiary for life, at Wetumpka, Alabama.

In these actions are more hope for Southern orderliness than in any influences that have hitherto been exerted there. And such a remedy is the only possible one. Essays on barbarism never change the habits of barbarians. Southern sentiment and the courageous actions of Southern men can work a change, and nothing else can.

Slavery and reconstruction reduced an element of the Southern population to a lower level than English-speaking men have elsewhere sunk, and they are a burden such as civilization nowhere else knows. They have held back Southern progress since they and their kind were slave-drivers and slave-traders, and they will weigh it down for a long time to come—these worst products of slavery, whose only distinction is that they are "superior to a nigger." The only way to get rid of that type of man and of his demoralizing influences on ignorant communities is the Alabama way of sending him to the penitentiary and not the South Carolinian way of sending him to the United States Senate.

But the large social problem presented is not local, although the worst effects are felt in the South. It is a problem that concerns the whole country; and we owe the heartiest encouragement to the brave men in Southern communities who are turning the tide towards orderliness.

NO ARTIFICIAL SOLUTION OF THE RACE "PROBLEM"

MOB-VIOLENCE in the South causes a recurrence of the talk of wholesale Negro emigration, even of deportation to Africa. There is nothing less practicable or further beyond possible execution than either plan. There are communities in some of the Southern States—in Texas, in Arkansas, and in the mountains of North Carolina—where no Negro is permitted to live. But such a policy can never be enforced over any considerable area. Nor is the Negro "dying out." The census returns show that the black population of Alabama, Mississippi and Arkansas has increased during the decade more rapidly than the white population. As the New Orleans *Times-Democrat* remarks: "There are twice as many Negroes in this country as when Lincoln set them free." They will continue to increase. They will continue to live chiefly in the South; and the problems that are presented by the presence of two races there will not be solved by statutes and constitutional amendments nor by violence, but only by the same forces that lift up society and sustain it everywhere—the actions of brave white men and brave black men alike. Let us applaud and sustain these for the elevation of our common country. They are more numerous than either single criminals or mobs; and there are no braver or nobler men than they in any land.

THE POLICE—THE PIVOT OF MUNICIPAL REFORM

THE most important man in the everyday work of municipal government is the head of the police force. In many ways he is the very pivot of it all. This has never been made plainer than Mr. Matthews makes it in his straightforward description in this magazine of the heads of the police forces in most of our large cities. If the chief be a resolutely honest man, and a man of moral courage, both the morals and the politics of the city will have at least a decent outward appearance; for it is hard, if not impossible, for a dominant "ring" to rule unless it can command a corruption fund by the connivance of the police; and the police force will be as corruptible or as incorruptible as the head of it is.

In our spasms of civic activity we bend all our energies to the election of mayors—properly enough, for police officers are not elected. But we are too likely to lose sight of the importance of this pivotal officer of our whole municipal system. The theory upon which police officers are chosen is generally wrong. Consider, for instance, how we have as the governor of Cuba a man who is a physician, soldier, engineer and gentleman, whereas the welfare of such cities as New York, Philadelphia and Chicago is committed to the class of men that would never be thought of for a responsible post in our military or "colonial" service.

It is to the great credit of the Committee of Fifteen in New York that public attention has been directed to the importance of this practical part of municipal politics—for politics unfortunately dominates it. The city that will call to the headship of its police army (there are 7,000 men on the New York force) such a man as we should put in command of an important army anywhere else, will show the way to a more important reform than can be won by electing many good mayors.

AMERICAN AND ENGLISH RAILWAYS—A CONTRAST

THE report of the Interstate Commerce Commission, giving the statistics of American railways for the year that ended June 30, 1901, shows a remarkably prosper-

ous year. It gives perhaps only a confused idea to say that $139,600,000 were paid in dividends, for of course dividends varied in rates over a wide range; but this was an increase in dividends over 1900 of $28,000,000 and over 1899 of $43,000,000. Yet the average rate per ton per mile of carrying freight was only 7.3 mills; in 1900 it was 7.2, and in 1899, 7.5. The average passenger rate per mile was two cents. With these rates and these increased earnings the business is in a most healthful and prosperous condition, and it is a capital index of general prosperity. The railway mileage in the hands of receivers has decreased from 12,000 in 1899 to 10,000 in 1900 and to 4,000 in 1901.

In contrast with this showing are the reports of English railways, most of which are suffering uncommon depression. The great London and Northwestern, for instance, declared the lowest dividend in forty years—4½ per cent. The English railways confront increased expenses and reduced earnings, and some of them have paid dividends out of their accumulated surplus.

The comment of many American railway authorities on this contrast is that the English persist in the practice of antiquated methods. It has been reported on both sides the Atlantic—whether truthfully or not—that American railway men have offered to take the management of more than one of the great English roads and to guarantee good dividends. Of course, English railway securities have fallen very considerably in the market this year, while American securities have risen enormously. It would be an international comedy if, when English investors are selling their English railway holdings and buying American, as they are doing because of the higher American dividends, Americans should get control of English railways because their stock is low.

RAILWAY ACCIDENTS

THE report of the Interstate Commerce Commission, as usual, shows many other interesting facts and some unfortunate ones—for instance, the deaths and injuries on railways. Of passengers, 249 were killed last year in the United States—about one to every two and a third millions of tickets taken. Although this is a slight increase over the number for preceding years, railway travel is pretty safe for passengers; for doubtless more than 250 people during the year fell out of windows and broke their necks. Yet 4,128 passengers were injured—a number which indicates a still disquieting degree of danger.

But the danger to employees is yet very great; for of these, 2,550 were killed (one out of every 137), and 39,643 were injured (one out of every 11). This ratio of deaths and injuries to the number of men employed has for several years shown an increase. It is, therefore, yet a hazardous service. The ingenious labor and the expense that have been spent in the problems of lessening these dangers have reduced them far lower than they once were. But the process of reduction seems now to have reached a standstill. There will always be a certain number of accidents due wholly to the carelessness of the employees themselves. But it is hardly probable that this point has yet been reached.

The number of "other persons" killed last year—most of them trespassers and tramps—is 5,066, and 6,549 of this class were injured. The grade crossings were responsible for 750 of these deaths. In other words, three times as many persons were killed at grade crossings as there were passengers killed. The obvious lesson is that while it is reasonably safe to travel by rail, it is dangerous to cross railroads or to walk on them, and still more dangerous to be employed by them.

THE LENGTHENING OF HUMAN LIFE

WE are rapidly gaining in the average length of human life. Better sanitation, the enforcement of precautions against contagious and infectious diseases, and the advancement of surgery and medicine, are causing an even more rapid reduction of the death-rate than the layman might guess. The census bulletin of deaths that occurred in 271 cities of 5,000 population or more shows that 18.6 persons died in 1900 out of every 1,000, whereas in 1890 the number who died in the same cities was 21 out of every 1,000. The average age at death in 1890 was 31.1 years; in 1900 it was 35.2 years. If these statistics be accurate the saving of human life that has been achieved in a decade is enormous.

And these figures are not at all surprising when one recalls the improved treatment of consumptives, the conquest of diphtheria, and

especially the very general return to country life by a very large proportion of the population.

A decided decrease in the death-rate from consumption was to be expected; but it is yet very high. It ought to be lowered with increasing rapidity, for there is practical unanimity of professional opinion—it has in fact been demonstrated—that most deaths which this disease causes can be prevented by proper public and private precautions, and by proper treatment in its early stages. Diphtheria may be said to have been taken from the list of fatal diseases. It is not likely that we shall again suffer from yellow fever. Typhoid fever can be lessened if not eliminated by proper sanitation. While pneumonia and kidney diseases had more victims during the past decade than the decade before, both these can be successfully guarded against in most cases by careful living. Cancer is almost the only widespread fatal disease that claims as many victims as it once did, against which no surely preventive or curative treatment has been found.

The encouraging reflection that this lengthening of life suggests is, that if so much has been gained with such imperfect sanitation as most of our cities yet have and with the present carelessness and ignorance of the masses of people about all hygienic subjects, what may we hope for when the agitation and the public education that have only fairly begun have had their full effect! A hint of the possible lengthening of life is given by the report that forty persons died last year in New York City who had passed their ninety-fifth year.

This forty might be made four hundred or perhaps four thousand; for to say nothing of the conquests of science over contagious diseases and the constantly widening range of saving surgery, the preventive measures that have already been proved effective are enough to lengthen the average life beyond any limit yet dreamed of. Under good sanitary conditions of residence and labor, a man of sound physical equipment, if he escape accidents, ought to live till he dies of sheer old age. It is a matter of knowledge in the first place, and of the practice of prudent living ever afterwards. Most men commit suicide. We say, in our ignorant politeness, that they die of typhoid fever, of pneumonia, of a liver or a kidney disease; and we mourn for them as if they had lived upright lives and died in obedience to nature. They killed themselves by disregarding nature. When public opinion reaches that stage of enlightenment foretold by Huxley, when a man who falls ill is regarded as a fool or as a criminal, human society will be made infinitely more interesting by the large number of persons who retain their maturity into the eighties and later—old men and old women who have garnered a long life's experience before life's charm gives out. A great man can do his important work twice as long, a charming woman will sweeten life about her for an additional generation, and men may undertake longer tasks and execute larger plans. Such an incalculable gain we are making by inches and with the incubus of superstitions and ignorance (what an appalling weight they are!); but we might make it by leaps and bounds if we directed all our educational and social energy to the task of the direct improvement of life. But men and women yet fight stubbornly for the right to shorten their lives and the lives of their neighbors. The cook and the upholsterer, the leader of every social "set," the plumber and the architect, the teacher and the preacher—those that lay hidden traps for us, and those that lay stress on the so-called higher things to the exclusion of knowledge of stomach and nerves—all these are yet more or less death-dealing in their ministrations.

Let us live in the country, drink water from deep wells, spend much time outdoors, count it a sin to be nervous, shun worry, which is the modern form the devil assumes, sleep long in fresh air, live in plain houses on well-drained hills, eat plain food and ripe fruit, keep our skins clean and keep them whole, regard good digestion as the mark of a gentleman—then we shall play with our great-grandchildren, and we shall see the fulfilment in octogenarian prime of the enthusiasms that stirred us in boyhood.

The lengthening of the average of human life in the United States (and in England too) must ultimately reduce the rate of life-insurance; for under the more favorable conditions of recent decades men have become better "risks" than men of half a century ago were. The mortality tables which the insurance companies in England have used were calculated from death-reports prior to 1869; but the actuaries have, after seven

years' labor, completed a table based on the death-rates between 1863 and 1893 The difference is that the "average man" of the insurance calculations at 25 years of age has by the new table an "expectation" of life 1⅓ years longer than by the old table; the average man of 30, two years longer; the average man of 50, nearly 3½ years longer. The Actuarial Society of America will set about the preparation of a new table based on American death-rates during a later period than the table now in use.

But, if the insurance companies are charging us for living longer than our fathers lived, we get the better of them, by the grace of this same old mortality table, when we take annuity policies; for we live to receive annuities longer than they calculated.

There is this additional consolation for the future: since life insurance is nothing less than a tax on us because of the sins of our fathers, for the benefit of our children, the necessity for it will wholly disappear in that generation whose fathers did no sin against health, and whose "average" of life is based on an expectation of companionship with one's great-grandchildren.

SOLDIERS BECOME SCHOOL-MASTERS

A BRAND-NEW chapter in the management of a "subjugated" people is the report of Mr. Fred. W. Atkinson, the General Superintendent of Public Institutions in the Philippines. The newness of the matter consists, in the first place, in the selection of so capable a man as Mr. Atkinson to do this work. Nearly 800 of the 1,000 teachers provided for had been appointed when his report was written, of whom seventy-nine were soldiers. The greatest need now is of proper school buildings. It is significant that the native teachers in Manila show such eagerness to learn English as to warrant the expectation that henceforth English will be the language of these schools.

THE SPREAD OF MANUAL-MENTAL EDUCATION

THE last report of the United States Commissioner of Education shows that we have 125 schools distinctively devoted to manual training, and that nearly 40,000 children are receiving instructions in them. More significant still, there are 170 cities in which the pupils of the public schools receive manual training as part of the regular course. There were only 37 ten years ago.

The increasing number of schools and of pupils is the least significant part of this movement; for, wherever the simultaneous training of mind and hand is once tried, manual training is never dropped. Teachers and pupils and the public soon come to know that it is the eternally and fundamentally right method. It is the first thoroughly sound plan of training youth that has been found since classicism began its career after the revival of learning in Europe; for progress in educational method has until lately been slower perhaps than in any other great department of work.

We owe much of this impulse to those who have in hand the humblest of our educational tasks. We have learned from the bottom upward. When General Armstrong saw that the only successful training of the freedmen must be a training that included the hands, the foundation was laid for the successful education of Negroes and Indians. Then it began to be apparent that the same principle was as directly useful to white youths as to black and copper-colored. Another impulse came from the technical schools of Germany; still another and a strong impulse was given by our rapid industrial development. This was felt especially in the direction of technical education; and the idea has rapidly spread that the forthright intellectual development given by technical training need not be less than the intellectual drill given by classical studies.

Then the next step was the final and conclusive step. It was clearly demonstrated that children who received both manual and mental training excelled in mental work those who received only mental training—as common sense, it would now seem, ought to have suggested long ago. But common sense had little to do with conventional education under the long and deadening rule of "moral philosophy" and "mental science," which taught that the mind was something wholly independent of the body.

This wholesome and natural principle of education is making its way in channels of activity that lie outside regular school work. The public vacation schools of New York City all last summer gave their boy pupils instruction in basket-making, carving, toy-making, whittling, cabinet-work, fret-sawing, applied design and leather stamping; and the People's University Extension Society, one of

the most intelligent and admirable charities ever devised, reports that during the past year it furnished 381 courses to the tenement dwellers in hygiene, sanitation, housekeeping, cooking, sewing, dressmaking, the care of children—and the thousand and one other vital matters of everyday life, to the ignorance of which is due most of the vice and crime and disease of our great cities.

The intelligent general adoption in the public schools of manual training simply as a part of education, and not as a specific preparation for a trade, may fairly be regarded as the most important educational event of our time. For there must come with such a recognition of symmetrical development not only a better realization of the dignity of hand-labor, but a complete emancipation from the endless chain of misconceptions of life that were bound up in the old "moral philosophy," which was the mother of most modern false ideals. There must follow, too, a much more rapid general knowledge of nature and of the fundamental facts of science, all which are parts of that philosophy which would see things as they are. Fortunately, too, the new movement is causing no unnatural revolt against the old learning. A boy will be a better Greek scholar, as well as a better man, if he has had a symmetrical training than if he had had only mental work to do.

THE GROWTH OF TECHNICAL EDUCATION, TOO

TECHNICAL education, too, which is a different thing from manual training for its educational value, advances with strides that are in keeping with our industrial progress. The plan recently formulated for the proposed Carnegie Technical University at Pittsburg is as significant as it is interesting. Mr. Carnegie proposes to establish, as a further development of the Carnegie Institute and Library there, an institution for study of applied sciences which shall make Pittsburg the centre of industrial education on a scale never before attempted.

The local Board of Trustees called to their aid four of the most eminent experts in the country, and this committee has reported an elaborate scheme for a technical college, a technical high school and for day and evening classes for artisans, which, if all adopted by Mr. Carnegie, will form a true university of industrial education.

Meanwhile an American engineer has just gone to India to establish trade schools—the most hopeful event for that country's material future which could be imagined. The Southern colleges are adding textile schools and industrial courses to their systems. The State of Wisconsin has taken a new step for this country (though Germany long ago led the way) by establishing a school of apprentices and artisans, where workmen will be able to get "in short courses at a minimum expense the basis of a sound technical education" such as will give to mechanics "a scientific basis to work on, making them capable of sustaining their place as the backbone of all industries."

In spite of the rapid growth of technical schools and the addition of technical courses in many colleges and universities, it is yet true that every creditable graduate of our technical schools finds work immediately.

HONORS AND AID FOR THE WEAK-MINDED

ONCE in a while, as lately in Jersey City and in Chicago, a "university" is discovered that sells academic and professional degrees. You may buy any degree you like, most of them for $10 each, some for $15, others two for $25; but the largest traffic seems to be in the degree of doctor of divinity, on the principle no doubt—if there be any principle involved—that the more worthless the degree the greater the demand.

The amazing thing about these periodical revelations of bogus "universities" is the steady patronage that they seem to have. It is intelligible that a man might buy the degree of doctor of medicine. In unenlightened communities it might have a value. But what value, even a value of vanity, could a purchased academic degree have? Or, if it have value, why should any man who would buy one not assume it without incurring any expense? A man could not be imprisoned nor fined nor hanged for writing A.M. or Ph.D., or LL.D. or D.D. after his name, or for writing them all. The man who buys one of them is not only a fool, but an unnecessarily extravagant fool. No academic degree counts for a fig in the United States unless it is known at what college it was won. And the honorary degrees, wherever conferred, count for nothing but a compliment or as thanks or encouragement to endowments. The interesting thing about this traffic in

worthless distinctions is the revelation that many weak-minded citizens of the Republic cling as fast to the love of some sort of "honors" as their fellows in France cling to the love of decorations.

Nor are bogus degrees the only vendible commodity of this kind. A delightfully frank circular every once in a while reaches the light—this, for instance, which comes from a firm of "writers of all kinds of literary productions:"

"We still continue to furnish the highest quality of Literary Work at the very lowest rate. We are no strangers to the educational institutions of the country, and our work is becoming more and more a necessity to the student as he becomes a specialist in education and to the man who, as the victim of circumstances, is forced to perform literary labors for which he has neither the time nor the adaptability. In the last twenty-two years, during which time we have been conducting this business, it has increased from a merely local institution to the limits of the English-speaking world. Of you who have not patronized us before we ask nothing but a trial. We do not ask you to speculate upon the question of our honesty. We require no money in advance.

"Our prices are as follows:

"High School Orations and Essays, $3 to $8.

"College Essays, Orations and Debates, $3 to $15.

"Political Speeches, $10 to $30.

"Lectures, $10 and upward.

"Sermons from 50 cents to $25.

"Our work, with the exception of the low-priced sermons, we guarantee original."

COMMUNISM FOUND WANTING

A RECENT bulletin of the Department of Labor, prepared by the Rev. Alexander Kent, is a document more fascinating than half the historical romances; for it is a historical sketch of coöperative communities in the United States. It shows what happens when the advocates of social regeneration "go by themselves and practise what they preach." The report is a record of melancholy failures. Of forty-five coöperative communities marking the Owen and Fourier movements early in the century, with an average life of two years each, not one remains; of the eleven communistic societies recorded in 1875 but two and a fragment still exist—with but one really successful; and of the twenty inaugurated in the last decade none give promise of life.

The Shakers with communities in nine States—fundamentally a church rather than a coöperative society—numbered in 1875, after nearly a century of existence, 2,415. Last year they numbered 1,200, a decrease of fifty per cent. in twenty-five years. Financially prosperous, charitable, industrious, moral, they are gradually dying out through the defection of their few children, most of whom leave the community, and through their failure to attract recruits. In all probability Shakerism will soon die a peaceful death. Other societies founded similarly, by religious enthusiasts from abroad, have already perished violently. The Zoar Society came from Germany at the beginning of the last century and settled near Pittsburg, later moving to Ohio. There, after the death of the leader and the consequent decline in religious enthusiasm, the new generation, first suing unsuccessfully in the courts, secured finally a division by agreement of the common property. The Harmony Society, with almost the same experience—early struggles, hard-won success, and then agitation for division—has so far staved off dissolution, but is reduced to a little close corporation of nine elderly people. The Icarian, like many another, failed through lack of agreement. With a most fantastic history of inauguration through the efforts of a periodical journal, of badly managed enterprises, of hard work and fierce dissension, the Ruskin Community has lived a precarious life in Tennessee and Georgia until now, after a decline from 250 to 140, a very recent newspaper report declares its property has been seized by the sheriff. The Christian Commonwealth—composed like the Ruskin of well-educated Americans—is in the hands of a receiver. Its newspaper says: "Those who attempt an application of the law of love to economic problems find themselves surrounded by every untutored crankism adrift. Neither the needy poor nor the bloated plutocrat will tax love so severely as the egotistical, narrow-minded crank."

It must be admitted, however, in the face of these experiences, that successful co-operation, however unlikely, is not utterly impossible. The Oneida Community—at first a religious society—after a stormy experience with their neighbors through practising free love, adopted family life in 1880, abandoned communism and formed a joint stock company. In 1857 the community wealth was $67,000; in 1900 the capital of "The Oneida Company, Limited," was $600,000 and its

surplus $150,247, with 219 stockholders. Though no longer strictly a "community," the Oneida Company is undoubtedly a successful co-operative experiment, employing in its factories all stockholders that desire to labor; but it is successful partly because it carries on business in the manner of any other corporation. The Woman's Commonwealth, a little group of women with "advanced ideas," is still in existence at Mount Pleasant, in the District of Columbia. Twenty-four celibates live together harmoniously. How long the community will last it is impossible, of course, to say, but thus far it has proved successful. But the bright particular example of a flourishing co-operative community, the only one that stands out as a satisfactory embodiment of the co-operative idea, is the Amana Society, inhabiting seven villages twenty miles west of Iowa City, in Iowa. This alone has fulfilled the hopes of its founders. Originally persecuted Pietists from Hesse, the Amanites to the number of 800 founded Ebenezer Community in New York in 1843; in 1852, when they moved to their 26,000 acre tract in Iowa, they numbered 1,200; and now 1,800 of them carry on the farms, factories, shops and stores of the Amana villages in happiness and comfort. They hold all property in common; they eat at common tables. Each has an annual allowance for clothes. Each does his share of the labor necessary to make the community prosperous. Their per capita wealth is less than that of the rest of Iowa County, but the system of common ownership secures equality of distribution. Though not rich, then, the community has grown steadily and gives every promise of continuance. The explanation of its success lies in the preservation of the original religious enthusiasm.

The communistic movement, however, with this exception, indicates that human nature is not adapted to community life; the invigorating shock of competition is after all what healthy Americans most keenly desire.

A YEAR OF THIS MAGAZINE

A YEAR ago THE WORLD'S WORK flung itself into the activities of our most active era, with the earnest purpose to interpret the important things that are done. It was a task as definite as it was serious, and a somewhat new one—to make an interesting magazine that should have a higher aim than to fill an idle hour, and a more original aim than to thresh over old straw and call the chaff "Literature," or to publish the commonplaces that men in official positions dictate in their decline for cash. For the most important things and the most interesting things are the very tasks that men now have in hand—men who do something and who love their work—Social Problems that directly affect human well-being; Education in its wider reach and more effective methods; Political Duties that are imminent and real; Literature that has substance as well as form and that takes hold on modern life; Invention and Industry in all their advances; Agriculture that respects soil and forest and is becoming the most ennobling of the practical sciences—whatever men do better than men have before done.

Nor is the magazine unmindful of ideal things. It is mindful of little else indeed. But the only ideal that the future will respect is one built on definite achievement, one that is reached by work and not by meditation only. It is a confusion of ideals that has caused so little heed to be paid to the literature of achievement. Most men among us who write well are yet writing about subjects of no earthly concern to anybody but their own craft; and most men who feel the thrill of our expanding life cannot write well. Our life, therefore, is one thing—a thing of extraordinary accomplishment, full of the healthful joy of growth. And most of our contemporary literature is another thing—a thing that lags far behind our work. Witness the fact that American character has found better expression in commercial and political achievements than in any books that we have produced.

Into the midmost field of cheerful and significant work this magazine has tried to carry its readers and to interpret the far-reaching meaning of it—to present the literature of action. Although this difficult task has been inadequately done during this first year, a serious effort to do it was at once recognized and it brought instant success to the magazine—conclusive proof, if proof were needed, that the idea upon which it is founded is a sound one.

If the magazine has carried half the pleasure to its readers that the work of making it has given its conductors, it has already added something to the cheerful earnestness of American life

THE PHILADELPHIA COMMERCIAL MUSEUM

BY

RICHARD A. FOLEY

THE Philadelphia Commercial Museum is already a unique institution. In its brief seven years of existence already a vast community of great business interests has participated city, state and nation; and the work of one or two men has operated as the dynamic force directing the whole machinery of enterprise. The greatest personal debt it owes is to Dr. W. P. Wilson, the originator of the plan, and to the late Dr. Pepper.

ITS ESSENTIAL PURPOSE

The Museum does not enter into trade of any kind. Its advices to inquirers of every State and nation are entirely disinterested and impartial. It has no political affiliations and "no places" to throw into the balance; and it derives no profit from any part of the work. Its sole purpose is to foster American commerce. It points out to the manufacturer where, in any part of the world, a market may exist for his products; it gives him detailed reports on the conditions of such markets and the requirements for trade there; it shows him what competition he may expect, and how to prepare for it; it supplies him with information as to facilities, transportation, freight costs, and packing and shipping to advantageous markets; it tells him what local prejudices and peculiarities exist; it supplies lists of desirable firms in all parts of the world; and it submits to the exporter, manufacturer and importer samples of raw materials and manufactured goods from every country. How it does, and has done this, is interesting enough to bear the telling.

From its files descriptive matter can be furnished which bears upon 120,000 leading foreign firms, located in every portion of the world where business of any importance is transacted. Last year American manufacturers asked for and received 27,000 reports on possible trade openings abroad; 2,224 special inquiries from American producers were investigated and answered; 78,000 replies to inquiries regarding American goods were sent to foreign countries: and for firms throughout the United States over 1,000,000 words of business correspondence, embracing sixteen languages, were translated.

The Museum of exhibits challenges comparison the world over, and the files constitute a library of commerce invaluable in its nature and almost impossible of duplication.

ITS VALUE TO HOME MANUFACTURERS

Through its agents abroad, the Museum renews and freshens the exhibits whenever possible. The work is aided by the United States consuls, who are under Government instruction to render whatever assistance they can. The Museum has learned much, and its representatives have had interesting experiences in collecting the samples which supply the home manufacturer with so many valuable suggestions and ideas. One day a manufacturer went to Director Wilson's office, and said:

"I have learned that a firm in England or Germany is making goods similar to mine, and is sending them to South America. I want to find out why I cannot get my goods into that trade."

Reports on how best to introduce goods, on the tariff, and on freight charges, together with samples of the articles, were furnished. In a short time the European manufacturers found a new competitor in the South American field.

Another man, who made horseshoes, asked the Commercial Museum:

"Is there any place in the world, outside of America, where I can sell my horseshoes?"

It was found that, in some countries, England was selling the hand-made articles. South Africa and certain Oriental countries, where the knowledge of shoeing was not supplemented by that of shoemaking, was yield-

ing profitable harvests. An English agent of the Museums ascertained all details, and sent on samples of the shoes. During the session of the National Association of Manufacturers in Boston, in 1899, the horseshoe manufacturer approached Dr. Wilson.

"Do you remember working up the question of horseshoes for me?" he said. "Well, within a week I have had an order to send ten carloads of horseshoes to South Africa for use in the English army. Your institution started the trade."

The first systematic effort at collecting samples came when a fund of $20,000 was raised by persons interested to defray the expenses of a commission to China to investigate trade conditions there. Chinese Minister Wu Ting Fang exhibited much interest in the plan, and cabled the Tsung Li Yamen to look out for the visitors. He also furnished Li Hung Chang with a practical illustration of American progress by sending a personal message, the graphophone being the medium. The commission traveled through the greater part of China, lodging at times in the Viceroys' houses. Samples of all the native cottons and of everything shipped into the country by England, Germany and France were secured. About 4,000 articles were shipped to Philadelphia, and the researches were discontinued only because the funds gave out. Shortly afterward Congress made an appropriation of $50,000, and the Museum spent it in securing an immense collection of the goods sent throughout the world by England, France, Germany and Belgium. A much greater gain, the officials of the Museum say, would be necessary to make this branch of the work as thorough as it ought to be; for export buyers and investigators are necessary, and the difficulties in the way of tracing the goods directly to the manufacturer are many.

INTEREST PROM ABROAD

Not a few of the nations, however, are glad to further the Museum's work for their own commercial benefit. From the Paris Exposition 200 tons of manufactured and raw products, from all the countries of the world, were secured. The State of Para, in Brazil, spent $3,000 to bring together a collection of its native products. Mexico has filled six rooms with its exhibit of indigenous materials. Its Government sends, regularly, all the new maps and commercial literature.

Two more instances of the practical value of the plan will serve to illustrate its general scope. A York, Pa., manufacturer saw one of the plows used in the Argentine Republic. It was a primitive affair. Within two years he had sold 20,000 of his modern implements in that country. A Pittsburg manufacturer of glassware discovered that there was something freakish with his foreign trade. He went to the Commercial Museum and found that, among its samples, was some of his own glassware, bought in Australia, as having come direct from England. He discovered English firms were selling his goods at an advanced price as their own. Today he is shipping directly from his own factory to the Australian dealers.

The samples serve still another purpose. At intervals they are sent to other cities together with the necessary literature, maps and reports, and are placed on exhibition for the benefit of manufacturers and business people generally. Several cities have thus been benefited. In all 1,100 different lines of productions are represented in the Museum's commercial collections. The project of establishing warehouses in other countries for the exhibition of American goods has been considered by the Museum for some time. Lack of funds here, too, prevents action. But in Caracas, Venezuela, a collection of this kind is raised and maintained by the National Association of Manufacturers, whose object—the fostering of American commerce—is the same as the Commercial Museum's, though its methods are somewhat dissimilar.

AN INTERNATIONAL ADVISORY BOARD

In order that the Museum may keep in touch with trade development in every land, it has formed an international advisory board, upon which every important Foreign Chamber of Commerce is represented. Commercial experts are sent at frequent intervals to different countries to study trade conditions, and supply information concerning American manufacturers and foreign houses. As many as six thousand such inquiries have been answered within a year. Printed reports are sent to the larger cities of the world, the Museum having its own printing plant, where pamphlets are published in six languages. This is one of the international phases of the Museum's work.

Special reports for American manufacturers and exporters cover a wide field. Where there is sufficient general interest they are printed and sent throughout the country. The diversity of interests to which they appeal is indicated at a glance at some of their titles:

"Steam Fitting in Finland;" "The Lamp Trade in Smyrna;" "The Foreign Market for Shovels;" "German, English and French Goods in the Foreign Markets;" "Ready-Made Clothing in Brazil." There are pamphlets on "Locomotives in New South Wales;" the "Excavating Pumps Used in Havre, France;" the "Ink Market in Germany;" the "Piano Market in Holland," and "Confectionery in Jamaica." Nearly 30,000 of these reports were distributed in 1900. Special circulars on trade marks, particularly the queer sort in vogue in China, have also been issued.

WHAT THE SERVICE COSTS

The firms who receive this service regularly, who have their foreign letters written by the Museum, and utilize its vast machinery to help their export trade, pay on an average $100 per year. But many who call on the Museum only occasionally, pay nothing at all. In fact, about 60 per cent. of the work is without charge. Last year's income from manufacturers was something over $60,000.

Of the educational side of the institution's work too little must be said. Classes from the public schools visit the Museum regularly to hear lectures and inspect the exhibits. This year the Museum placed permanent exhibitions in 200 schools of the State. They comprised 400 subjects each, with literature, brochures for the teachers, maps and photographs. The work was discontinued when the Philadelphia Councils cut the Museum's appropriation in half.

A MODEL COMMERCIAL MUSEUM

That these details go to complete a scheme which contains much that is admirable is widely recognized. Germany's Minister of Commerce, at a meeting held a few years ago to consider the best method of securing a knowledge of foreign conditions, said that the ideal plan would be the establishment of a national commercial museum, and he pointed to the Philadelphia institution as a model. It is not possible to determine just what total financial benefit has been summed up for the commerce of America in the Commercial Museum's utility. It has attempted that in which many have failed. But united effort and well-regulated machinery seem to have accomplished much that is lasting. One thing at least has been demonstrated beyond all cavil: there could be no more potent factor in the development of foreign trade than the establishment of a series of commercial museums in the chief trade centres of the country, each devoting itself to the special interests of the locality, and all operating under the direction of one parent organization. Such is the view taken by Dr. Wilson. Such, too, is the opinion of those builders of trade who would like to see the Philadelphia Commercial Museum—or a group of American Commercial Museums—made the clearing house for the trade of the world—truly a great ambition.

The commercial museum is an old story in Europe. Austria has three; Belgium, nine; France, twenty-six; Germany, seventeen; Holland, four; Italy, seven; and Greece, two. Asia has several, and there is one in West Africa. Some are small affairs, supported by private capital. Others are directed by the Chambers of Commerce, and the more important are under Government supervision and control. Although Great Britain and America lead the world in industrial and trade activity, they have but one established commercial museum each, England's being the Imperial Institute.

The leading commercial museums which are taking an active part in the promotion of foreign trade are the Austrian and Hungarian Museums at Vienna and Budapest. The Belgium Commercial Museums at Brussels and Antwerp, the export sample warehouse at Stuttgart, and the museums at Frankfurt, Amsterdam, Tokio and Constantinople are making great strides in trade work. But none of them gives practical commercial information with the comprehensiveness and thoroughness that the Philadelphia Museum does. The Vienna Commercial Museum, established twenty years ago, is probably the most effective of the foreign institutions, though to Belgic and Dutch enterprise the origin of the idea undoubtedly may be traced, the guilds established centuries ago having made commercial investigation a part of the scheme of their organization.

BEGINNING WORK ON A LARGE CANAL

THE BLOOMING OF A SAHARA

THE RECLAIMING OF THE SALT DESERT OF THE EXTREME SOUTHWEST — FARMING BELOW THE SEA LEVEL — DRIED UP RIVER BEDS FOR IRRIGATION CANALS

BY

WILLIAM E. SMYTHE

AUTHOR OF "THE CONQUEST OF ARID AMERICA"

UNDER the magic influence of national prosperity and Oriental expansion a new impulse of development is sweeping over our Farthest Southwest. This is the region drained by the noble stream which, after receiving great rivers of Wyoming and Colorado, of Utah and Arizona, becomes the Colorado—the Nile of the West. When to this is added the territory around the Gulf of California and the mountains and seacoasts stretching westward to the ocean and northward to Santa Barbara, we have a segment of the continent truly described as the Farthest Southwest.

AN UNDISCOVERED COUNTRY

With the exception of a little district in Southern California, chiefly within sixty miles of Los Angeles, this is an undiscovered country, in an economic sense. Here and there the perennial flow of small mountain streams has been made to coax a little verdure from the desert and to sustain a few families or communities. Here and there some wilderness mine of extraordinary richness has sent its lonely pack trains through the shimmering heat and voiceless silence. Over it all, but particularly in a few favored spots, the pastoral industry has flourished with varying degrees of success. Along its seacoast, villages have dreamed of coming greatness as ports for world-wide traffic, but practically the gates of the Southwestern empire have stood barred and locked, awaiting some new and powerful impulse from without.

Within this region are vast areas of fertile soil which, if irrigated, would support millions of people. Singularly enough the water supply is more abundant than in localities favored with earlier development. There are mountains of iron, of coal and of salt—yes, literally mountains of these valuable raw materials. There are mines unworked and bursting with ore worth a hundred dollars per ton at the smelter. There are in the remarkable combination of soil and climate potential-

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the agriculture of the day.

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explanation of the mystery

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RAILROADS LEAD

For years one of the

ities of production beyond anything known in the agriculture of the day.

Why, with these alluring possibilities, has this region remained almost untouched by the intense Western life of the past generation? Hon. Thomas B. Reed made eloquent explanation of the mystery when he said:

"There wealth only can produce wealth. Man singly and alone might as well attempt to subdue the Himalayas as to cope with these wastes, but the hand of united and associated man will some day reach forth to grasp the great results."

That day has come simultaneously with the day of great aggregations of capital and of daring conquests of new industrial fields. This time it is, first of all, the conquest of growing channels of communication.

RAILROADS LEAD THE WAY

For years one of the dreams of the Far Southwest has been a direct line of railroad from Salt Lake City to Los Angeles. This would unite the intermountain region with the seacoast, and effect a wonderful social and commercial interchange between localities differing radically in their climate and products. Even more important, it would open up to settlement and development an immense territory which must lie vacant and useless without transportation facilities. About a year ago Senator W. A. Clark, of Montana, announced that he would back such a project with his millions. Work was soon begun and vigorously pushed. To the amazement of the public this resulted in arousing the Union Pacific interests to action. They, too, determined to build a similar line, and today both railroads are in process of rapid construction. Hence the cup of joy runneth over in "the City of the Angels" and "the City of the Saints."

A MAIN CANAL ON THE COLORADO DESERT
This completed canal is fifty feet in width

SAN JACINTA MOUNTAIN

Near Palm Springs, on the edge of the desert

THE BRIDE OF THE COLORADO

The valleys traversed by the Colorado River and its tributaries will constitute the focal feature of the Southwest. Here cheap power and irrigation will bring into existence towns, manufactures and a dense agricultural population. The transformation is already well begun.

If popular imagination has pictured one place above another as the true American Sahara it was the wide stretch of desolation known as the Colorado Desert, lying on the borders of California and Mexico. No traveler on the route from New Orleans to San Francisco ever approached it without dread, nor was borne too swiftly through its stifling heat and alkali dust. Tales of prospectors who had fallen of thirst and left their bones to whiten under the pitiless sun lent a touch of horror to the evil reputation of the place. Against this sombre background a new picture of green fields and singing brooks and rising homes shows only the more brightly by contrast.

For the truth is that this is not a desert, but a delta—not a stretch of sterile sands, but a vast tract of sedimentary deposit rich almost beyond belief. It is the natural bride of the Colorado River. The marriage of the water and the soil was celebrated on the 13th

CARRYING SALT FROM THE DESERT

of last June. Already several thousand acres of crops have sprung from the union. During the fall and winter tens of thousands of acres will come into cultivation. In a few years it will be hundreds of thousands of acres; ultimately an area approaching two millions of acres will have been conquered, peopled, made opulent with fields and homes. Nowhere else in the world is there another such favorable conjunction of abundant water supply and large tracts of fertile soil lying in one compact body. Even in its smaller aspects it means that the productive capacity of Southern California will be more than doubled in the next few years.

In appearance the delta is a wide, level plain enclosed in a frame of purple mountains. Much of it is so smooth and free of vegetation as to stand ready for the plow, requiring neither grading nor clearing. Other parts are marked by "wind-blows" or heavy growths of mesquite. But everywhere the soil is rich and deep, the creation of the silt-laden waters that are now to make it blossom, with the aid of man.

IRRIGATION ALONG FORMER RIVER BEDS

The system by which these lands are being reclaimed is wonderfully simple. Water is diverted three miles above the Mexican boundary, conducted about eight miles in a large artificial canal, then turned into dry channels of old rivers, which need only to be cleared of brush and slightly improved to

SHOVELING SALT INTO CARS

serve every purpose as large arteries of the system. These river beds are used for a distance of about fifty miles. Other main canals and an elaborate system of laterals are built in connection with these streams. The contour of the land is such that the water is conducted through Mexico and back into the United States before it can be applied to the great area of Government lands. The single critical feature of the engineering scheme was the problem of diverting the water from the river in such a manner as to secure the headworks against danger from floods and the reclaimed lands against disastrous overflow. An impregnable spot was chosen for the permanent heading in a hill composed of rock and natural cement, which boldly fronts the deepest current of the Colorado River. Here substantial works of stone and timber tap the stream at a depth of nine feet below its minimum level. Pending the completion of this work a temporary heading serves present needs, and it successfully withstood the unusual rise of last June. The eastern bank of the main inlet canal is constructed as a levee to protect the delta against overflow. Engineering talent of the best ability and experience has been employed in the work.

FARMING BELOW SEA LEVEL

In the Colorado delta we are to have the unusual spectacle of a large community of farmers living and working below the sea level. This was formerly a goodly arm of the Pacific. As recently as 1891 we were furnished with a sharp reminder of ancient geography by the sudden appearance of what was called "the Salton Sea." This was due to the overflow of the river and lasted several months. The control of the stream accomplished by the new irrigation works makes a recurrence of the event impossible. The altitude and depression of the lands to be farmed range from about forty feet above sea level to two hundred and sixty-five feet below.

A CUT THROUGH SOIL 250 FEET DEEP

The climate of the delta is similar to the rest of Southern California, except that the temperature ranges higher and the rainfall and humidity much lower. As a summer resort the place will never rival Bar Harbor. On the other hand, it is far more tolerable than were New York and Chicago during the hot season. For eight months in the year the climate is charming.

The products of the country, as revealed by a few old ranches sustained by pumped water from the river and by the crude farming of the Indians after overflow, cover a wide range. The growth is prodigious wherever water touches the soil. This is strikingly shown by fields of wild hemp and arrow-weed and forests of mesquite. Melons, berries and grapes around Indio, where a little water is had from wells, anticipate all other California products in the market by two or three weeks. Green corn is fit for eating in forty days after planting. The date palms mature heavy bunches of finely-flavored fruit when five years old, and it is believed

A DATE PALM
Showing bunches of fruit

A GROUP OF WILD PALMS

that these may be produced upon a commercial scale. If so, we shall have something new in American horticulture.

But the great agricultural staples will be the chief products of the delta. These are grain, alfalfa and live stock. This will be a famous feeding ground for herds of cattle driven from the ranges in Arizona, the Coast Mountains on the West, and over the line from Mexico. Because of the great yields of alfalfa—eight crops a year with a total yield of ten tons per acre—cattle may be fattened more cheaply here than anywhere else in the country. There are large and profitable markets within shipping distance. Probably the alfalfa and cattle industry will be the largest single source of wealth in the new settlement. Grain will also be produced upon a grand scale and with record-breaking yields, as a result of irrigation.

The Mexican lands have been bought of private owners; those in the United States have been taken by settlers under our land laws. Water is brought to the international boundary by a construction company composed of private capitalists, but mutual companies of landowners provide for its distribution over their farms. The inrush of settlers and speculators surpassed all expectations. Still, it will be the work of years to complete the settlement. The canal system will be extended to meet the growing demand.

The water supply is superabundant. Government measurements show that at its lowest stage the Colorado River carries water enough to irrigate 8,000,000 acres, while it is estimated that only about 3,000,000 acres are so situated as to be susceptible of irrigation by gravity.

THE RISING COMMUNITY.

Town-building has begun with proverbial Western enthusiasm. "Imperial" is the significant name of the desert capital. Thirty miles from the main line of the Southern Pacific, it already possesses store, hotel,

PALM SPRINGS ON THE DESERT

A BIT OF RECLAIMED DESERT

CHILDREN OF THE DESERT

church, postoffice and local newspaper. On the boundary of the two Republics is "Cameron," close to the lake of the same name. East of Salton River, on the portion of the delta nearest the railroad, "Sunset Springs" serves as a centre for settlers and canal-builders. The railroad station is "Flowing Well"—without the well!

Doubtless some large towns and many small villages will grow up here. Phoenix, an Arizona city of 15,000 or more, is sustained by an irrigated area less than that now under completed canals in the Colorado delta, and less than one-tenth of that subject to ultimate reclamation.

Soil and water make only a part of the economic foundation of the region. Around the borders of the desert, mountains and foothills are full of minerals. Oil prospecting is going forward at a lively rate. Thousands of acres have been located for this purpose. At "Salton," in one of the lowest depressions of the ancient sea, salt is found in vast quantities and is shoveled from the ground directly into the freight car. In the near mountains are varieties of building-stone, including a fair quality of marble. Millions of acres of grazing lands are tributary.

SAN DIEGO'S OPPORTUNITY

To the city and seaport of San Diego these new developments are big with opportunity. The delta region lies directly in the rear, separated only by a barrier of low mountains. Favored with the only natural harbor on the southern coastline, San Diego could not grow to be a large city until two things should happen. First, its "back country" must be opened to settlement; second, there must be a direct eastern railroad outlet to some through connection. This would make the true short line to the Orient. The first of these desirable events has happened in the reclamation of the delta. The railroad situation the San Diegans and their new fellow-citizens at the eastern end of the county have bravely undertaken to solve.

SUNRISE ON THE DESERT

MT. CHIMBORAZO
21,420 feet high

OPENING THE RICHES OF THE ANDES

THE CONSTRUCTION OF A RAILROAD IN ECUADOR FROM GUAYAQUIL TO QUITO, THE REGION OF THE INCA WEALTH — AN EXAMPLE OF AMERICAN ENGINEERING ENTERPRISE

BY

C. LOCKHART

A SECOND conquest of ancient Peru has begun, a conquest by steel, but it is the steel of rails and cars, not of swords. Instead of Spaniards climbing from Guayaquil to Quito to loot a rich land, it is a railroad that by the energy of an American engineer is now climbing through the defiles of the Andes, from the alluvial fertility of the coast up into the wealth of the high plateau beyond the Cordilleras. Steel rails will pry open the doors of a land of gold and grain, and bring prosperity to a drowsy people. The opening of Ecuador by a railroad is an event of importance in the extension of civilization.

Ecuador was the northern province of the ancient Inca empire of Peru. The caravels of Pizarro found their first haven at an island off the coast of Ecuador, and Quito was one of the great cities the Spaniards sacked. The useless ransom the Inca so easily produced amounted it is thought to nearly $15,000,000 in gold and $3,000,000 in silver. This was a trifling surplus of the wealth of the country which the Guayaquil and Quito railroad is now opening. The Spaniards saw everywhere

FROM THE INCA ROAD
Looking toward Mt. Chimborazo

great herds and flocks. They raided the land, staggered away with a booty such as no other country had then furnished invaders, set the yoke of their religion upon it, and, gradually Ecuador fell asleep again. The very geography of the land is not yet accurately known. The eastern part of the republic is yet unmapped. Its people have never been numbered. No country on the earth has a more varied surface. No land has so many climates, the changes in altitude having the effect of changes in latitude. Tropical plains, snow-clad mountains, fertile plateaus, vast rubber forests, unmapped rivers, flowing into the vague headwaters of the Amazon—these make the Ecuador that will be thrown open within two years by the completion of the Guayaquil and Quito Railroad.

The story of the building of this railroad began in 1896, when Gen. Eloy Alfaro attained power. He had fought a score of revolutions. He had faced death many times. He had lived years in exile, both in the United States and in Mexico, learning the principles of good government which he is now putting in force. He has proved himself one of the strongest characters who ever ruled in South America. He refused a permanent dictatorship and had himself constitutionally elected president. Serving his four years, he now quietly retires, but his successor, Gen. Plaza Guiterrez, is one of Alfaro's own men.

When the people of Ecuador called Alfaro to power in 1896 he found two great tasks before him. The first of these tasks was to free Ecuador from religious domination. Much

ANCIENT INCA MOUND, AMBATO

PLAZA ON MARKET DAY, GUARANDA

of the large possessions of the religious orders were confiscated as a school fund. Today Ecuador is still a Catholic country. Gen. Alfaro himself is a devout man. But the state is divorced from the church. The parochial schools have given place to an admirable public school system, modeled on that of the United States. English is taught in all these schools, for it is to English-speaking people that Alfaro chiefly looks for the development of Ecuador. All religions are guaranteed liberty of worship, so long as they do not usurp the functions of the state.

This task finished, he turned to his second great measure, the construction of a railroad from Guayaquil to Quito and radiating into many parts of the country. Other leaders of Ecuador had realized the importance of such a railroad, but none had shown sufficient strength of character to overcome the obstacles. In 1884 Marcus Kelly had succeeded in building a short, narrow gauge road from Guayaquil across the alluvial plains to the foot of the mountains. But the mountains themselves had proved insurmountable. These mountains have checked the ambition of many foreign engineers.

When Alfaro came to the Presidency, a mere hint of the wealth of the country had trickled out to the world along the Indian

TYPICAL ECUADOR WOMAN

A SOUTH AMERICAN INN
Native hotel in the Cordilleras

ENCAMPING AT BALSAPAMPA

trails that for centuries had skirted cliffs and crossed torrents on swaying bridges. Indians with packs on their heads, mules burdened with a little of the hidden wealth, llamas laden with the products of the country, stepped along the trails and came down to Guayaquil. This was all.

"Only an American can build this road," said Gen. Alfaro, "and we must find the American." He sent Luis F. Carbo, one of the keenest of his subordinates, as Minister to the United States. His real mission was to find the American who could build the road from Guayaquil to Quito. He found Mr. Archer Harman, a Virginian, now forty-one years old, the son of a Confederate officer, and a railroad contractor who had done much good work in various parts of the country. He had built sections of the Baltimore & Ohio, the Chesapeake & Ohio, the Cincinnati Southern, the Colorado Midland, the Denver & Rio Grande, the Louisville & Nashville, the Kentucky Union and other roads. In every instance he had had mountain sections to build. "Archer Harman will blast off the

face of the earth, if he is in a hurry," the builders used to say.

"I will run down there and look it over," said he, after he had had a conference with the Ecuadorian Minister. He took the next Panama steamer. From Guayaquil he went to Chimbo over the little railroad which Marcus Kelly had built. At Chimbo he found the best mule in Ecuador in waiting for him. He made a ride over the Cordilleras to Quito with a speed that broke the native record by two days, and gave the natives themselves their first insight into a determination which is now the talk of the land. In the month that followed, Gen. Alfaro and Mr. Harman came to know each other. The friendship that was then formed has grown stronger as the men have proved their mettle.

Then Mr. Harman sent to New York and gathered American engineers about him. In person, he led them into wild places to blaze a path for the railroad. For months he endured hardships and danger, making light of them. The first of the grading slid down the mountains, when there was a rainfall of ten inches in twenty-four hours. Then Mr.

CUTTING THROUGH SNOW AND ICE
In the Andes Mountains, Chili

THE ROAD IN THE CORDILLERAS
Rio Bamba, Ecuador

Harman found a new way, this time through the Chan-Chan Valley, through a pass nearly 12,000 feet high. It is along this line that rails are now being spiked.

When Mr. Harman left Quito to come to New York again, he took with him a liberal concession from the Ecuadorian Government. In New York he confronted the task of raising a large capital on an unknown proposition. From New York he went to London. The difficulties he there overcame would have been insurmountable to a less resolute man. The stability of the Ecuadorian Government was not then as apparent as it is now. Moreover the credit of Ecuador was at a low ebb. Her bonds were going begging at fifteen cents on the dollar. Under authority from General Alfaro, Mr. Harman went before the council of foreign bondholders of which Sir John Lubbock was chairman, and made an arrangement whereby the railroad company wiped out the national debt, paying forty cents on the dollar. He was successful in securing fin cial help.

He returned to Ecuador to find the work of the preliminary survey nearing completion. His first task was to place the republic on a gold basis. He did this in the face of great difficulties. Ecuador now not only has no national debt, but presents the strange sight of a South American Republic with a firmly established gold standard. Meanwhile the friars, driven into Colombia, had preached a Holy War against Ecuador, and a Colombian army came over the border. Mr. Harman took the field with Alfaro's generals and fought through the skirmishes of the northern provinces to the decisive battle of Chimborazo, where the forces of Colombia, although superior in numbers to the army of Ecuador, were defeated so completely that 1,800 dead and wounded were left on the field and 4,000 prisoners were taken. When these prisoners were sent to Gen. Alfaro at Quito, he presented each Colombian with ten dollars and a new suit of clothes, allowing them to return ir try. Many of them stayed rman's railroad.

ANCIENT INCA BRIDGE NEAR GUARANDA

Meanwhile, James P. MacDonald, a New York contractor, who had built railroads in Cuba, was awarded the contract for the construction of the road. Finding native labor unsatisfactory, Mr. MacDonald imported 6,000 Negroes from Jamaica and several hundred natives from Porto Rico who are now working under almost military discipline. The railway has already been equipped and opened for traffic for a distance of sixty-seven miles, and a further forty-eight miles to Palmira Pass is soon to be opened. From Palmira Pass to Quito there are practically no engineering difficulties. The entire line to Quito will be finished before the 1st of July, 1902.

The coast district already tapped by the road now furnishes forty per cent. of the chocolate of the world, this alluvial plain being famous for its cocoa plantations. Sugar, coffee, tobacco and fruits, growing there in profusion are waiting to be increased by scientific cultivation. As yet it has been the Germans who have appreciated the possibilities of these plantations. On the high plateau about Quito one of the most fertile grain countries of the world covers a district somewhat larger than the State of New York. Here, too, are flocks noted for the fine quality of their wool, and herds whose hides bring high prices, since the altitude is peculiarly fitted for curing leather. It has long been vaguely known that Ecuador is one of the richest and most varied mineral fields in the world. In the south, partially opened by the road, five veins of coal in seams of six to thirty feet wide have been uncovered. South America now imports coal at a great expense. In the northern districts the eruptive nature of the country has deposited enormous quantities of sulphur, ninety-eight per cent. pure, as well as large stores of pure alum. In the east of Ecuador immense tracts of rubber forests exist untouched at present save for what the Indians bring out on their heads. Here, too, are large areas of valuable hard woods. The town of Ambato has a record of only five degrees changes in temperature during an entire year. Strawberries and peaches can be had every month.

All this wealth is now seen vaguely as the railroad from Guayaquil to Quito opens wider the doors of the Andes. The Germans are pushing into this land, but it is to Americans that the riches opened by American engineers really belong.

RUSSIA AS A GREAT POWER

AN ESTIMATE OF THE IMPORTANCE OF THE EMPIRE AS A FUTURE WORLD POWER—THE PECULIAR NATURE OF ITS INSTITUTIONS

BY

SYDNEY BROOKS

FROM every point of view Russia is a staggering subject—in her size, her variety, her aloofness, in what she has done in the past, still more in what she hopes to do in the future. How compress into a few thousand words more than the barest hint of an Empire that only a few generations ago was a land-locked State, and that now stretches from the Baltic to Chinese waters, from the Arctic to the Black Sea, and must ultimately debouch on the Mediterranean and the Persian Gulf—an Empire already nearly three times as large as the United States, inhabited in its European portion alone by over twenty races, and ruling, on a system which Western civilization has long since discarded, a population of 140,000,000 souls? Nor is it the mere physical immensity alone that bewilders and eludes. The fundamental problems of national type and character that every other great power has settled, except Austria, which is too irredeemably composite to settle anything, Russia is still slowly shaping to an issue which not even the Russians themselves can discern. The political future of the country, too, is no less uncertain and speculative than the lines along which its mental and moral development will run. Everything

about Russia is fluid, shifting and problematical. It is an Empire in flux, an Empire that has not yet found itself, an Empire of which anything and everything may be predicted—an Empire, in short, of colossal doubts as well as colossal hopes and possibilities. So far is Russia from falling under definite and categorical headings that her oldest question, the question that ethnologists and statesmen have wrangled over since the days of Peter the Great, is still unanswered. Is Russia, by her genius and temperament, her origin as well as her destiny, European or Asiatic? Is she the most backward part of Europe or the most progressive portion of Asia, the most eastern of western or the most western of eastern nations? Or, as the Slavophils insist, is she neither, but something unique and distinctive and purely Russian, standing midway between Orient and Occident, borrowing, it may be, from each but assimilated to neither, developing on her vast plains a new and peculiar civilization?

It was by way of reaction against the exaggerated imitation of Europe that the Slavophils first came to the front, opposing Moscow to St. Petersburgh, pitting the old and Russian against the new and foreign. Development, they hold, must come from within, not from without, must be a natural and spontaneous growth, and not a patchwork reproduction of alien institutions. Europe to them is what the United States was to the England of thirty or forty years ago—it is quoted and pointed at as "the awful example." Its long record of class strife, its note of pride of caste, its scourge of Parliamentarism, its *bourgeois* middle classes, and beneath, its proletariat—all this the Slavophils, and Russians generally, both dread and despise. The mission of Russia, as they see it, is to show the world that national liberty can be secured under an autocracy, and that the contentment and prosperity of the masses may be purchased at a less perilous price than representative government.

HOW RUSSIA PROGRESSES

Between these two sets of tendencies the nation still oscillates, now drawn one way and now the other, according to the views and disposition of each successive Tsar. For the moment it is the Slavophil theory that obtains. The reaction that followed Alexander II's burst of reforming energy has not yet spent itself, and from the present Tsar nothing in the way of innovation is to be looked for. The history of autocracy is necessarily the history of peaceful revolutions interspersed with periods of inertia. Perhaps there are only two institutions in the Russian Empire which the Tsar dare not demolish—the church and the village commune. All else is as a *tabula rasa* on which he may write at will. The consequence is that a Tsar of spirit and determination, like Alexander II, can in a few years reorganize the State from top to bottom, leaving it to his successors to complete or stifle his work as they please. As a rule they prefer to stifle it. Conservatism takes alarm and a reforming Tsar is automatically followed by a reactionary Tsar, who spends the best part of his life quietly nullifying his predecessor's innovations. What we of the West, therefore, call by the name of Progress, advances in Russia, when it advances at all, by fits and starts and sudden, hurried jumps—only to find itself, but too often, in a *cul de sac* with all the exits closed by an impenetrable bureaucracy. Hardly one of the many great reforms that ushered in the second half of last century has escaped mutilation. Hardly one survives as it was promulgated. All have been disfigured and emasculated till they are nothing but a painful parody on the liberalism that inspired them. Still, by taking long stretches of time and not fixing one's attention exclusively on particular epochs, one finds on the whole a slow but steady approximation to European institutions and the European spirit. Whether it satisfies her national pride or not, the destiny of Russia seems to be to borrow civilization from Europe and to carry it into the heart of Asia. That is the conclusion to which all history points. The transformation will not take place at a single revolutionary stroke; that was the delusion of the Nihilists. It will be a tedious and protracted process, a drawn-out, silent, subterranean struggle between education, industrialism and liberty on the one hand and the mediævation of a church-supported autocracy on the other. The deadliest foe that such a system of government as prevails in Russia can have is an educated working class. Such a class is now by way of being born. When it reaches maturity and begins to realize its power, it will, unless all human experience goes for not [illegible]late the

very atmosphere with what Russians would call revolutionism, with what we know under the name of Liberty. It may not be in our time; it may not even be for a couple of centuries yet. But that ultimately Russia will duplicate Western experience, pass through the same struggles and the same broad phases of social and political growth, appears inevitable.

HER RELATIONSHIP WITH EUROPE

This, of course, is not to deny that the origins and development of Russia separate her formidably from any and every European country. It is only to assert that the balance of probability points to a gradual modification of these differences and a closer conformity to Western civilization. Russian history is the history of the evolution of authority; European of the evolution of liberty. Russia, as it presents itself to us today, is an autocracy in alliance with the Orthodox Church, buttressed by a bureaucracy, and resting on the ignorance, the devotion, the half-patriarchal, half-communistic instincts of the peasantry. The *mujik* is the keystone of the structure. Between him and the Tsar there intervenes none of that orderly sequence of classes and grades familiar to Europe. The gap is immense, greater perhaps than between the ruler and the ruled of any other State, and it is not of course wholly a vacuum. But it is filled, where it is filled at all, not by a gradation of ranks evolved from the natural play of historical forces, not by a farming class, a class of peasant proprietors, a working class, a merchant class, a moneyed class and an aristocracy, as in Europe, but by one artificial link—the bureaucracy.

Today the Russian nobility and the Russian bureaucracy are well-nigh interchangeable terms. To end all questions of rank and precedence, Peter the Great instituted his "Table of Ranks," over which all the servants of the State are distributed in a double parallel series, according to their grade. The system has bound the nobility hand and foot to the State and still further divorced them from the soil. The Russian nobles are practically therefore nothing but men in the service of the State united into a body. The importance of the individual is reckoned not by the length of his pedigree or rent-roll, but by his standing in the bureaucracy, the office he holds. For him landed property is a means of maintenance merely; he does not settle on it, does not become attached to it. The river of his fortunes, as M. Leroy-Beaulieu puts it, flows from the Tsar, not from the land. The cities and the State absorb him. The Russian nobility has therefore few of the marks of an aristocracy, neither its stake in the country, nor its influence, nor its privileges, nor its defects. It does not feel itself to be in any sense a corporate and exclusive body; it has no pride of caste; it gives itself no airs, and slowly it seems destined to be expropriated by its former serfs. It is a standing illustration of the paradox that autocratic Russia, though legally split up into four water-tight compartments—nobles, priests, townsmen and peasants—is fundamentally and in spirit a democratic nation.

AUTOCRATIC YET COMMUNISTIC

And not only a democratic nation, but a nation four-fifths of which practises an unconscious communism. That surely is the climax of all political paradoxes that a State which is in many ways mediæval at the top should be realizing at the bottom the most extravagant dreams of the ultra-Radicals. The paradox is, however, more apparent than real, communal property being really the oldest known form of holding, and an adjunct to, rather than a negation of, the point of view that makes autocracy possible. It is by virtue of the patriarchal spirit it embodies that it exists today among the Russian *mujiks*. Some few words on the system are indispensable, because through it the Russians hope to escape the dead weight of a proletariat, the problem of the submerged tenth, which in their eyes is the cancer of Western society.

The Emancipation Act of 1864, while it freed the *mujik* from serfdom and endowed him on an average with from eight to eleven acres of land, left him otherwise pretty much as he was. He now owns the land of which his former landlord let him have the use, but the mode of tenure is still the same. Even when he has fully repaid the interest on the purchase money advanced by the State—say in another twenty-five or thirty years—he will still not own his lots by individual right. From time immemorial the form of land tenure in use among the Russian peasants has been that of communal holding. It is so today even after the emancipation. The lots

purchased from the landlords were not distributed among the various members of the village community, but became the collective property of the commune itself. The commune, too, is the official unit of taxation. The State fixes, from census to census, the amount of the contribution it expects from each commune, based on the number of male heads it contains. For the payment of these taxes, as well as of the redemption dues incurred by the Act of Emancipation, it is not the individual peasant who is responsible, but the commune as a whole. The commune therefore has a double function to fulfill. It has to collect and pay in the taxes and it has to distribute the land among its members.

The commune, too, is, or was up to 1889, a self-governing entity of the purest democratic type. The heads of the families meet together, elect an Elder and a two-thirds majority settles everything. The commune dispenses a rude but efficient justice, based on tradition, for few can read or write; it may fine and imprison and even exile to Siberia. It may also grant divorces. Over its members its power is so absolute and so little disputed that it is often said that the main result of the Emancipation Act was to transfer the peasants from the yoke of the landlords to that of the commune, the curious, inevitable and far-reaching right it possesses in the power to withhold permission from any of its members to leave the commune. Such permission can only be secured with the consent of two-thirds of the council. Even when it is granted, the emigrant is still held responsible for his share of the communal taxes and many a well-to-do tradesman in the cities forwards annually to the authorities of his old village his portion of the common debt. Before 1889 the communes were independent of the central government. In that year, however, Alexander III placed them under the control of an administrator chosen by the local nobility, and into his hands many of the powers exercised by the village assembly have now been gathered.

CAN SUCH A PARADOX REMAIN?

Such, roughly and meagrely, is the system under which live some 80,000,000 of the Tsar's subjects. The Russians, the Slavophils above all, prize it as a bulwark against pauperism and the terrific bugbear of a proletariate with which they torture their imaginations. Their pride in it as the last word of social science, as a natural and unforced solution of the agrarian problems that afflict Europe, and as an institution peculiar to Russia alone, is unbounded; and much of it is justifiable. The communes form a sort of gigantic insurance trust for the protection of the peasantry. They are an efficient barrier against the encroachments of large landowners, as well as against improvidence or bad luck, and if Russia were destined for all time to remain a purely agricultural country they might justify even the high expectations of the Slavophils. But that is a large "if" and there are several others that in the future seem certain to modify profoundly the communal system. One is the new spirit of individualism and independence which since the passage of the Emancipation Act has done much to destroy the unity of the old family life, of which the commune was but an extension. The peasantry in increasing numbers are buying land of their own, outside the commune, and promise in the course of time to create a rural middle class. Will the two antagonistic systems of private and collective ownership be able to exist side by side?

Moreover, it is found that the commune is not an infallible guarantee against the ordinary chances and fluctuations of life. Some peasants grow rich and buy up those who from laziness or drink have fallen into debt. Few communes but have in their midst a small and omnivorous plutocracy. And even at the best the ordinary *mujik's* life is a ceaseless struggle to keep body and soul together. The commune may provide him with land, but it cannot supply him with the capital, brains and implements to work it. Ignorance and penury, the lack of live stock and the necessary tools, the excessive taxation and the antiquated and exhausting methods of culture are the reasons of the recurring Russian famines. How far the commune is also responsible is a point that Russians hotly dispute. To a mere Westerner it would seem that agriculture can never really flourish under a system which allots to the peasant not a considerable parcel of land but a few strips in different fields—often far apart from each other and from his home—which offers him no fixity of tenure and therefore discourages improvements, which makes him conform willy-nilly to a certain rotation of crops and to a certain mode of cultivation, and forbids him to sow,

plough or reap without the sanction of his neighbors.

ITS RELATION TO INDUSTRY

The critical condition of Russian agriculture is at any rate potent enough. With the constant subdivision of the communal lands necessitated by the growth of population and under the increasing stress of American competition, its decline can only be hastened. The communal system can apparently only hold its own by revolutionizing its present methods of culture, which will require money, or else by drafting off the surplus population into Siberia, and the other waste-lands of the Empire. Capital is everywhere the crying need, and the greatest of all Russia's internal problems is whether the *mujik* will or will not succumb to the fascinations of industrialism, leave the country for the towns, and so introduce into the Russian polity a new artisan class, little likely to accept, or be acceptable to, the pure gospel of autocracy and orthodoxy. Such a movement has already begun, is indeed being openly favored by M. Witte, as the only possible means of working out the financial salvation of the country. It is a movement which, once set on foot, cannot be automatically stopped, and therein lies its peril, distant, perhaps, but not less inevitable. By calling in the towns to make good the deficits of the country, M. Witte may have unconsciously made himself the advance agent of a revolution by the side of which Nihilism was the merest squib.

Up to now the peasant has been both agriculturist and manufacturer, devoting to home industries the long winter months. This is a stage of commercial development which all the countries of Europe have passed through and left behind, and already it is apparent that Russia will have to pay tribute to the inexorable law of competition. Industrialism has won a footing and is swiftly multiplying its activities. In a few decades Russia will be known and recognized as the most tempting field, outside of South America, for moneyed enterprise in the world, and American millionaires, by the time they have completed the financial conquest of England, will find in the long-derelict Empire of the Tsars yet more profitable scope for their energies. Within the last twenty years Russian textiles have doubled in value. Since 1889 the output of coal has risen from 6,000,000 to 12,000,000 tons, of pig iron from 800,000 tons to over 2,000,000, and of steel from 150,000 tons to 1,200,000. These figures, insignificant as they are, still show that under the shelter of a rigidly protective tariff a beginning has been made. Already it is on record that over 2,000,000 of the population are engaged either in mining or manufacturing industries; while the share capital of all the companies now in operation reaches $1,000,000,000, one-fifth of which represents foreign investments.

THE NEW INDUSTRIALISM

M. Witte, in short, is inoculating Russia with the virus of western industrialism, and assuming, as I think one safely may, that the process will be repeated and will spread under his successors, the question of its effect on the national life becomes pressingly pertinent. What M. Witte claims for his policy is that in the long run it will supply the remedy for the agricultural situation. The peasant, always within an arm's length of famine, cannot unaided work out his salvation. The capital needed for the restoration of the land cannot, as things are, be raised on the land. By opening up new employments in the towns, M. Witte hopes eventually to shift the burden of taxation on to the shoulders of the manufacturers, and thus to supply the State with the necessary means for staying the agricultural decline. Undoubtedly the experiment had to be tried, and, prosecuted alongside of railroad development which will eventually relieve the congested Black Mould Belt and populate the virgin soil of Siberia, it should succeed. At the same time, Russia and the *mujik* being what they are, the experiment is fraught with tremendous risks. Hitherto the towns have been merely islets in a rural ocean, and the solidarity of the commune has protected the *mujik* from the propaganda of revolution. But when Moscow becomes a Russian Chicago, differing in nothing but the accidentals from any other manufacturing town of Europe or America, and the commune has sunk into a mere organ of local government, is it not likely that the change, so manifestly western in spirit, will be followed by western results? Autocracy will not be put to its decisive test till it finds itself confronted by industrialism.

But this belongs to the future, possibly the remote future. For the time being the *mujik* is in a state of transition, slowly working out

to their fulfillment the effects of the Act of Emancipation. The western world knows him pretty accurately through the social and didactic pamphlets which are hidden, none too obscurely, between the lines of Russian novels. His dreamy, kindly, inexperienced nature, saturated with a religious mysticism, and swinging from extreme to extreme with the suddenness of a Russian springtime, is as familiar as his ignorance and obstinate inertia and devotion to routine, his Boer-like craft and distrustfulness, his taste for drink and petty deceit. From all descriptions of him there rises the conviction that, once freed from his foundations, he has within him the makings of a thorough-paced revolutionist. For political liberties in the western sense he has at present absolutely no longings. Autocracy he accepts as he accepts the changes in the seasons, without question. But two mighty forces are at work upon him—education and industrialism—and the future of religious and political Russia largely depends on the manner of his evolution under their influence. Already it is noted that once settled in the towns, he takes with enthusiasm to socialism; and the fact is pregnant with possibilities. The Russian *mujik* is ignorant but far from stupid, and when he gets what his friends demand for him—a chance and a couple of centuries' credit—his union of practicality with intensity may produce some amazing results.

THE RULING AUTHORITY

Foreigners are often puzzled to know precisely what or where is the ruling authority of the Russian Empire. The real governing power of Russia is not the Tsar, still less is it the Senate or the Council of the State. It is the bureaucracy. The Tsar can do nothing without it and next to nothing against it. It stands outside and beyond the jurisdiction of the courts and, having all the threads of administration in its hands, can put what construction it pleases on the Imperial commands. Ignorance, indolence, a passion for routine and, above all, corruption are its note. Russia has been well described as an absolutism tempered with venality. Bribery permeates the whole of official life from the lowest grade in the service up to the Court itself, with what effects the next war will show even more clearly than did the Crimean and Turkish campaigns. Next to the bureaucracy in power over the fortunes of the people stand the police, who have been rightly likened to an alien army conducting its operations in a conquered country. The police can when they please assume all the powers of a general in an enemy's land; they can fine, expel, imprison, suspend papers, close up schools, even place an embargo on the real estate and incomes of private persons. Political inquisition goes necessarily hand in hand with a system which regards the policy of trusting the people as the dream of madness. Russia lives under an organized system of espionage and terrorism, of which passports are the basis. Small as it might appear to Western eyes, the abolition of passports, by restoring to the people the right to come and go and settle as they pleased, would amount in Russia to a political revolution.

A MODERN AND MEDIÆVAL NATION

Little wonder that with such agencies at work, the reforms of Alexander II have been truncated and nullified. The local assemblies he introduced, which held within them the seed of a new and regenerated Russia, which were slowly feeling their way, however awkwardly, towards works of unquestioned usefulness, have been brought under the bureaucratic survey. The elective justices of the police have been abolished, even the village commune has its official overseer, the jury system has been restricted to the decision of unimportant cases and everywhere the budding liberties have been ruthlessly clipped. Never was Russia so thoroughly enmeshed in red tape as today, never was the bureaucratic spirit so indisputably in control, or the press subjected to such close and tyrannical surveillance, or the most elementary rights of free men more coolly and systematically outraged. And yet with it all education spreads rapidly and—more surprising still—with the consent and assistance of the very authorities who are most resolutely concerned in seeing that it bears no political fruit. The official attitude towards education is spasmodic, like its attitude towards everything else—now liberal and helpful, now restive and alarmed, now capricious and even repressive. An autocracy must needs have its hesitancies on so vital a matter, for in every other country education has spelt constitutionalism. This is indeed the fundamental problem of Russia—how to enlighten the people and yet preserve auto-

cracy, how to raise the nation to the intellectual level of its neighbors and yet exclude it from political life, how to rule a modern society on mediæval lines. To westerners any effort to grapple with such a problem must seem like an attempt to "solder close impossibilities and make them kiss." The experience of both Europe and America appears to make it a condition of human nature that when once liberty is admitted anywhere—as it has been admitted into the Russian communes and district assemblies—it cannot be stayed from permeating the entire nation, and that education and industrialism give but a swifter impetus to its inevitable onrush. That the twentieth century will not pass away without bringing to Russia a Parliament and representative government fits in with all the teachings of history, whether peaceably or under the stern pressure of revolution, time alone can show.

PEACE, A NATIONAL NECESSITY

It will be seen from all this that the foreign and domestic policies of Russia must have a vital bearing on one another. For some years yet, peace at almost any price, peace and capital with which to develop her resources, must be her great preoccupation. For Russia is Russia the Unready, an estate of magnificent expectations, but at present hopelessly encumbered; and to realize those expectations, the future has to be discounted on a grandiose scale. Agriculture has to be revivified and Siberia colonized; the Siberian railroad needs relaying from end to end; the Manchurian line must be hurried on; a great North and South railroad, joining the Siberian and Transcaspian lines, is a strategical necessity; before long the plans for the roads from the Caucasus into North Persia and thence, it is hoped, to the Persian Gulf, will have to be taken up; and in addition there are the three canal schemes — the Caspian-Black Sea, the Black Sea and Baltic, and the Baltic-White Sea. All these projects are feasible, but all are gigantic, and for none of them can Russia find the money out of her own pocket. From France little more can be hoped for, and while London and New York, and to a smaller extent Berlin, can still be relied upon to subscribe for Russian loans, a nation that lives by borrowing, and is even suspected of making good its deficits by borrowing automatically binds itself to peace.

AS TO RUSSIAN EXPANSION

The notion that Russian expansion has been built up on the peculiar craft, subtlety, wisdom and aggressiveness of Russian diplomacy is a popular but quite erroneous superstition. The real reasons of that wonderful growth are far simpler and more natural. They are to be found partly in the migrating instincts of an agricultural population and partly in the necessities of self-defense against nomadic tribes. The slow conquest of Northern Asia has been an effortless, peaceable, almost automatic movement—just as instinctive as the impulse that drove the English to plant their colonies by every sea. If one can detect in it any deliberate purpose, the thread of any high political motive, it is the legitimate one of finding an outlet to the water. No doubt the process has been facilitated by the geographical position of the country and the autocratic form of government. Asia is much more a continuation of European Russia than an alien colony and the *mujiks*, who swarmed over the Ural Mountains before serfdom chained them to the soil, found themselves in a land identical with their own. Towards the North, East and South their expansion was a spontaneous movement following the line of least resistance. Towards the West, where Sweden and Poland alternately threatened the future of Tsardom, it was the Government by means of war and conquest that pushed the Russian frontiers to their present position. In the direction of the Hindoo Koosh, Afghanistan and Central Asia the Imperial advance has been a series of annexations made in self-defense. Those annexations will only cease on the day that Russia encounters a power strong enough to maintain order within its boundaries, and to prevent its subjects from committing depredations on their neighbors. The wild panics into which England is periodically thrown by the approach of Russia to the Indian frontier are due to ignorance of the reasons and motives of Russian expansion. Russia has neither the desire, nor the ability to conquer India, and the day on which she ventured on so impossible a task would mark the downfall of Tsardom.

TWO PRINCIPLES OF RUSSIAN IMPERIALISM

Two principles, conscious or otherwise, direct the course of Russian imperialism—to extend her frontiers till Nature or a rival

government can guarantee their security from tribal attacks and to find an outlet to the sea. Everywhere in sight of the water Russia is nowhere in control of it. The Black and Caspian Seas are today inland lakes—the latter being absolutely isolated and the former only accessible through a dangerous channel that can be opened or closed at the will of Constantinople. Ice makes the Baltic unnavigable for eight months in the year, and the passage through it into the North Sea is at the mercy of any power commanding the straits between Denmark and Sweden. To plant herself by the sea is still, as it was in the days of Peter the Great, the goal of Russian ambition, and nowhere, except at Port Arthur, has that goal been satisfactorily reached. It is not only because the orthodox Russian regards Constantinople as the devout Catholic regards Rome that Russia is irresistibly drawn toward the Turkish capital. It is that the possession of Constantinople insures an exit to the Mediterranean. To debouch on the Mediterranean and the Persian Gulf is the key to Russian policy in Asia Minor.

FURTHER EXPANSION MEANS INTERNATIONAL DIFFICULTY

This is an interesting and critical moment in the history of the Russian Empire. The period of unresisted expansion is well-nigh over, and at four vital spots difficulties are swiftly accumulating. Those spots are, of course, the Balkans and Asia Minor, where Teuton and Slav must soon be brought face to face; the Persian Gulf and Central Asia, where Russian and British interests are rapidly nearing a climax, and the Far East, where Japan is avowedly resolved to stake all on the independence of Korea. To deal adequately with any one of the vast issues which these problems raise is impossible in this article. Of the imposing developments of German policy in Turkey and Asia Minor, by means of which Constantinople is becoming a German city and Syria a German colony, I have already written. The process is viewed with unqualified disfavor at St. Petersburgh, and by way of response to German ambitions it seems likely that Russia will have to take up once more an active Slav policy in the Balkans. Already she has succeeded in drawing Servia, Bulgaria and Montenegro closer to herself and closer to each other, and an autonomous Macedonia, barring the way to Austria's advance to the south, is something that the world may see before long In the Near East it is becoming clearer that the issue is not between England and Russia, as it used to be, but between Russia and Germany. England will never fight to keep Russia out of Constantinople. The next Eastern question that supervenes will find her neutral, and the matter will be settled, peaceably or otherwise, between Kaiser and Tsar—with what results none can predict.

THE DANGER OF THE FUTURE

The real danger that threatens Anglo-Russian relations is mutual and incurable suspiciousness. There are, however, signs that the English democracy is slowly feeling its way to a thorough understanding with Russia on all points where their interests seem to clash. Such an understanding would have to be based on Russia's appearance in the Persian Gulf in return for a "delimitation of frontiers" in Central Asia that would remove once and for all the bugbear of a Russian invasion of India. With regard to Korea and Japan nothing can be hazarded except this—that so long as Russia contents herself with Manchuria alone, and abstains from forging a connecting link between Port Arthur and Vladivostok, peace seems assured. That Japan regards the possession or at least the independence of Korea as vital to her safety, and is prepared to go all lengths rather than suffer it to fall into Russian hands, may be held as axiomatic.

The future, then, both internally and externally, is not such as the Slav can look upon without some misgivings. An alliance today between England, Germany and Japan would thwart all she has striven for since the days of Peter the Great, would bring her internal affairs to unexampled ruin, and cut her off for centuries from the warm seas. And though such an alliance is wildly improbable, the mere possibility of it is a token that, splendid as has been her development, Russia's position today is by no means absolutely secure. One thing the Slav has on his side: he can wait. Peace and patience must be for many years his political formulæ, if the bright hopes and confidence with which all Russians face the future are to be realized.

THE TRANSFORMATION OF A MARYLAND ROADWAY

Before

After

A GOOD ROAD, A GOOD INVESTMENT

THE OLD-TIME RURAL METHOD AND BAD ROADS—THE NEW ROAD BUILDING, INTELLIGENT AND ECONOMICAL—OBJECT LESSONS

BY

EARL MAYO

IN many country regions the road tax may yet be paid either in money or in labor. And it is paid almost invariably in labor, because that is by far the cheaper method. One man in each district is appointed road superintendent or "pathmaster" for each year. The office is passed around from one man to another from year to year. Each knows as little about building a good road as his neighbor.

On the appointed day the citizens turn out with teams and all available farm implements and attack a designated portion of the highway. For the purpose of satisfying the tax rolls, each man's labor counts as a day, a boy counts as a day, a team counts two days, a plough or scraper counts one, and in some instances, hoe, pick and shovel receive credit for a day's labor each. It is merely playing at making a road. Instead of attempting a slight improvement over the whole length of the road district, the farmers work together in one place, ploughing up the sod, stones and weeds alongside the track, scraping them to the centre of the roadway and roughly leveling them off with hoes and spades, but making no attempt at thorough grading or rolling.

Now this is no better than road-building in the time of Moses. Practically the whole labor is lost. Worse damage is done than that, too, for the farmers then rest content with the road; the way is blocked to any improvement. Such barbaric methods cause millions of dollars loss to the country every year.

The amount of time and labor now thrown away in misdirected efforts at highway improvement is sufficient, if properly applied, to give every locality in the country good substantial roads that would answer every ordinary purpose, and that within the next five years. Almost every locality contains materials capable of forming smooth and substantial highways if properly treated. Knowledge,

ELEVEN TONS DRAWN BY ONE HORSE AT OMAHA
This shows what can be done on the steel track road

more than money, is needed to give us better roads. By far the greater number of public roads the country over follow the courses that accident led them to assume when the districts through which they run were first settled, old Indian trails or blazed paths of

A TYPICAL MUD ROAD AT CANANDAIGUA, NEW YORK

AN UNIMPROVED ROAD IN MAINE

the early settlers, roads located before the topography of the region was sufficiently known.

The road surveyors of the period of early settlement had a partiality for the bee-line principle in determining the routes for public travel, and many of the roads they laid out led in straight lines between the two points to be connected without regard to such obstacles as quagmires or steep hillsides. The old stage-coach pike from Baltimore to Washington runs up and down hills the grades of which are as much as ten or twelve per cent. By making slight detours these grades might have been reduced to three or four per cent. The famous old Genesee road, leading from the river of that name to Lake Erie, through Western New York, was located in a similar fashion, and in places its grades are so sharp that even light traffic refuses to undertake them. Effort expended in attempting to work such roadways is so much time and labor thrown away. A horse can haul on a ten per cent. grade only one-fourth the load he can move on a level.

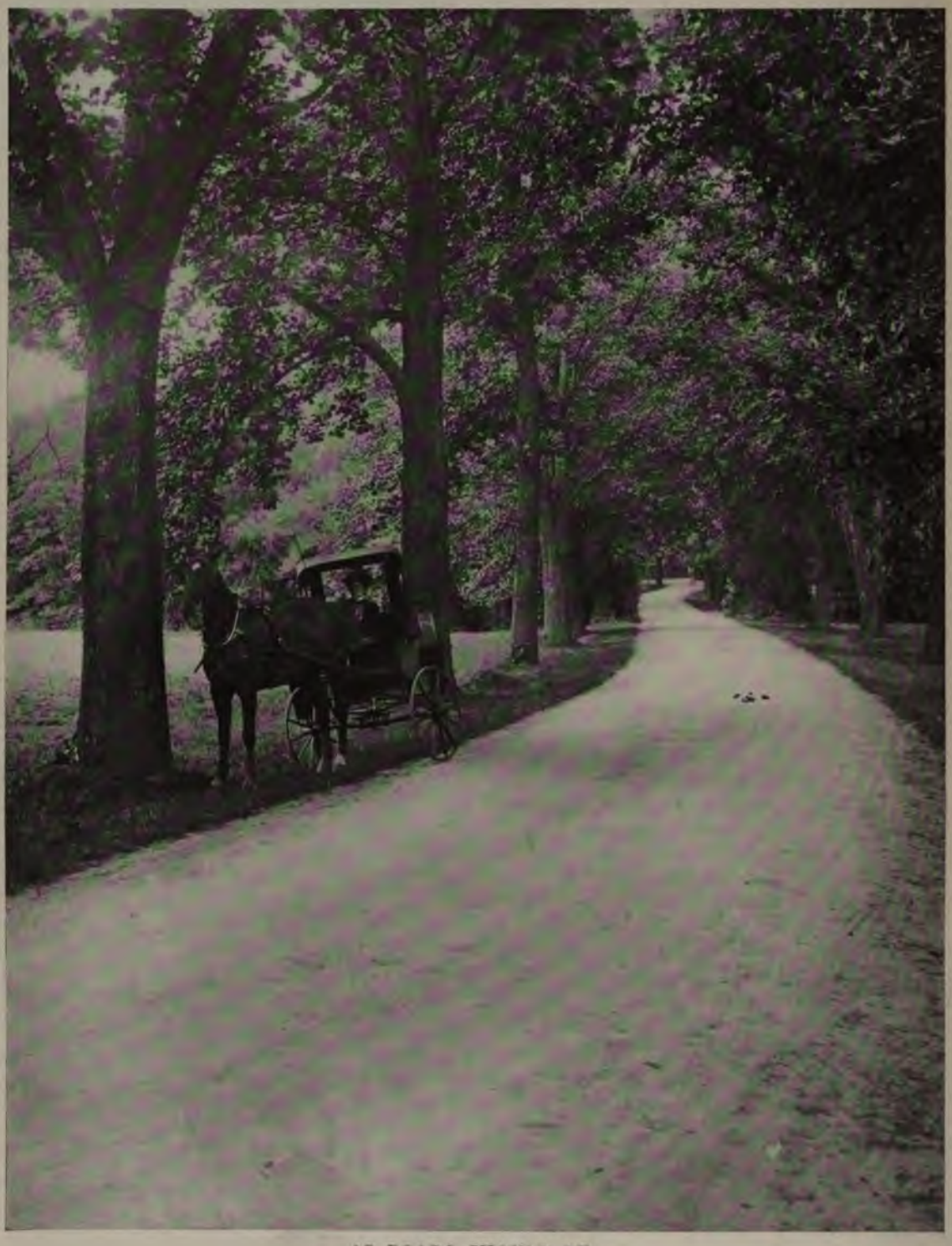
As to materials, everybody who is likely to be concerned in the building of a road will know that gravel of medium coarseness is an excellent material, that sand alone is useless because it will not pack under the pressure of traffic, and that ordinary earth loam is about the poorest possible material for the reason that it is broken up by the frost in winter, mixed into mud by the action of rains and cut into ruts by the wheels of loaded wagons.

In many of the Northern and Eastern States, boulders, trap-rocks, tough limestone, field, river-bed or quarry stone are readily available. Unfortunately, the residents of some of the regions especially favored in the matter of road construction material do not realize its worth.

A young engineer relates an experience that befell him in Northern New England that aptly illustrates this point. The road skirting the farm where the engineer was visiting was one of a sort common in that part of the country in which the thin layer of soil topping the limestone rock had worn away in many places, leaving points of rock projecting from the road-bed. The engineer proceeded to show his host how to convert this practically useless road into an efficient one.

While the engineer and his friend were engaged in directing this occupation, the largest landholder and most influential citizen of the township happened to pass. He gave the enthusiasts a little well-meant and sarcastic

A BADLY DRAINED EARTH ROAD



AS ROADS SHOULD BE

A gravel road near Washington, D. C.

advice about the futility of attempting to make a road in that region in such a manner. He had lived in the region for fifty years and had had charge of the road work for fully half that time, and he knew that there was no use in attempting to build good roads.

Two years later the young engineer received a letter from this same man in which he said:

"You deserve the thanks of the whole community for what you did up here. That strip of road you built remained good all the following fall and winter, and in the spring I used to drive a mile out of my way to pass it because it was the only dry spot in the township. Your work made me ashamed of myself. I applied for the place of road commissioner again and bought a rock crusher for four hundred dollars, which I have presented to the town. We now have two miles of road just as good as yours, and we are going to add two or three miles every year. Those old rocks that used to give us so much trouble are proving the salvation of our roads."

The president of one of the great railway systems in the Eastern United States, who takes a keen interest in the improvement of the public roads in the region through which his line passes, has hit upon an effective plan for accomplishing this result. The roads about the railway stations are built by the company and are first-rate gravel ways. In constructing them the plan has been followed of extending them for a short distance from the station until some particularly atrocious spot in the public road is encountered and of allowing them to terminate abruptly there. The jolts that the residents are receiving in passing from the well-constructed road to the one that is rough in summer and bottomless in winter are bringing results.

One of the agents of the Bureau of Public Roads Inquiries at Washington was sent down into Florida last year to see what could be done with one of the aggravating sand roads of that State. He found that the only effort that had been expended on the highway had been to scrape into the centre of the road the loose sand from the sides, which was as regularly pushed out again by the wheels of passing wagons. A sand road is not governed by ordinary rules. There is nothing worse for it than rapid drainage. The engineer set to work to treat the side ditches in such a way that they would hold as much water as possible. Then from a neighboring clay bank he hauled a quantity of clay to mix with the sand in forming the surface of the roadway. The local road superintendent watched these proceedings with ill-disguised scorn, but when the operation was completed, he found to his surprise that a really firm and efficient road had resulted.

If a community makes up its mind to acquire a good road through its own unaided efforts, the wisest course is to make the first step, after the determination of a route, the sending of samples of available materials to the laboratory maintained for the examination of road material by the United States Government at Washington.

But an expert road engineer to superintend the work can accomplish more. There are four such experts attached to the Office of Public Roads Inquiries in Washington and their services are contributed by the Government to aid the cause of good roads.

Directly after the completion of a road it should be watched with particular care, as any inequality in the material used will manifest itself under the pressure of the first passing vehicles. These breaks or depressions should be remedied at once, as otherwise they will lead to the disintegration of the entire roadway. In this connection it may be said that in making repairs care should be used to employ material exactly like that which entered into the original construction, as otherwise the added part will not assimilate with the other and will result in breaks and rough spots.

The cost of a smooth and durable road if built of stone, of a single-track width of nine feet, need not be more than $800 or $900 per mile. This is assuming that the road is being built in a region where the stone is readily obtainable at small cost. A gravel road equally well built should not cost more than $200 per mile, while the cost of a road built from less durable materials ranges from $50 per mile upward.

The first necessity is to be dissatisfied with the bad road: to realize the economic loss such a road is to the community. After that must come the realization that the new highway must be built by a man who knows road-building as a business, and that money spent at the start saves money in yearly repairs. There is seldom difficulty in financing what is manifestly a good investment. The building of a good road is usually a practical business proposition, as the people are learning.

CHILD-LABOR IN SOUTHERN COTTON MILLS

A PERSONAL INVESTIGATION OF ITS EXTENT AND ABUSES — THE SOUTH GOING THROUGH THE BARBAROUS EXPERIENCE OF ENGLAND AND NEW ENGLAND — ABUSES THAT CRY TO HEAVEN FOR CORRECTION

BY

IRENE M. ASHBY

THE South now has nearly seven hundred cotton mills, one hundred and thirteen of which were built in 1899 alone. Such rapid progress cannot take place without producing unnatural conditions of some sort. The worst evil that has come with this rapid growth of cotton mills it needs no expert to discover. It is the same evil that the cotton manufacturing towns of England and of New England suffered, and against which a long and strenuous agitation was necessary.

Come with me to an Alabama town, where there is a large cheerful-looking factory. Walking up the long, orderly building, deafened by the racket, yet fascinated by ingenious machinery, you become suddenly aware of a little gray shadow flitting restlessly up and down the aisles—a small girl, and with bare feet and pale face. She has a worn and anxious aspect, as if a weight of care and responsibility rested already on her baby shoulders. She either does not look at you at all or she turns her eyes but for a moment, unchildlike in their lack of interest, looking back immediately to the spinning frame. A thread breaks first at one end of the long frame, then at the other. The tiny fingers repair the damage at the first place and she walks listlessly to the other. Something goes wrong above, and the child pushes forward a box to stand on that she may reach it. With a great shock it dawns on you that this child is working.

This is a scene with which I became too painfully familiar ever to forget or to misrepresent. During the latter half of December, 1900, and the first half of January, 1901, I visited twenty-four cotton mills in sixteen cities and villages of Alabama. I chose Alabama because the industry, although comparatively new there (only four out of the twenty-four mills I went through averaging more than five years' existence), is in an active stage of growth, and a child-labor bill had been pending before the Legislature.

I was prepared to find child-labor, for wherever easily manipulated machinery takes the place of human muscles the child is inevitably drawn into the labor market, unless there are laws to protect it. But one could hardly be prepared to find in America today white children, six and seven years of age, working for twelve hours a day—aroused before daybreak and toiling till long after sundown in winter, with only half an hour for rest and refreshment. When the mills are tempted by pressure of work they make the same old mistakes of their industrial ancestry. Some of them run the machinery at night, and little children are called on to endure the strain of all-night work—and are sometimes kept awake by the vigilant superintendent with cold water dashed into their faces. I should hardly have believed it had I not seen these things myself.

One evening in December I stumbled through a totally unlighted mill village, falling by the way into ditches and deep ruts, and knocked at the door of one of the wooden huts where I saw a light. I asked the woman who opened it if I might come in. Assenting, she ushered me in. She was surrounded by a brood of very small boys, and her consumptive husband sat beside the fire. The smallest child, a poor little fellow that

[The author of this article made a personal investigation of child-labor in the cotton mills of Alabama; and this article is the result of her observation and study.]

looked to be about six years old, nestled up to me as I talked to them. All worked in the mill, except the mother, they told me.

"Not this one!" I exclaimed, looking down at the wee, thin boy beside me.

"Why, yes." He had worked for about a year; last year he worked forty nights; he was nearly eight years old now. They left that mill because the night work was too hard on the children.

In answer to a query from me, the child said that he could scarcely sleep at all in the day time.

At one place I heard of children, working on the night shift, turned out for some fault at two o'clock in the morning, allowed by a compassionate clerk to go to sleep on a bench in the office, as they were afraid to go home. Ladies told me, too, of a common sight in the mill cottages: children lying face downward on the bed sleeping with exhaustion, just as they had come in from the night shift, too utterly weary even to remove their clothes.

The long day work for children prevailed in every mill that I visited: in six of these night work had been or was still the custom.

This problem is not a new one. It has had to be faced in every place where textile trades have been established. But the Southern States now enjoy the unenviable position of being the only civilized country in the world which does not by enlightened legislation protect the children of its working people from this inevitable consequence of unregulated industrial development.

In Europe—England, France, Germany, Italy, Holland, Belgium, Switzerland, Denmark, Sweden and even Russia—there are laws prohibiting the employment of children in factories under a minimum age, only Italy placing this lower than twelve years. Most countries insist on at least a small educational qualification and regulate conditions and hours of employment for minors, and limit such employment to the day time. These laws were made necessary by the appalling consequences of leaving the matter alone. Cotton spinners grew rich in England at the beginning of the nineteenth century out of the labor of little children. Had it not been for the check of factory laws, the trade would soon have been wholly worked by women and children, as all possible skill was turned to adapting machinery to their powers. Ring spinning was invented in the United States when male labor to run "the mule" spinning machines was scarce in New England some sixty years ago. In every British colony where manufactures are carried on and in twenty-one States of the Union (including all the northern cotton manufacturing States) legislation has been found imperative. For it has been proved to be perilous to the community for a comparatively small set of mill owners or stockholders and superintendents to procure labor unchecked. They have everywhere done so at the expense of the health, the morals and the education of a great industrial class. In face of this universal experience it is strange to find the primitive condition of things in the South side by side with the finest modern machinery. Of the mill managers some are, and others affect to be, lamentably ignorant of the history of their own trade; they oppose legislation; some of them have told me that they had no idea that any laws on the subject were in force in the United States.

They have a set of excuses and reasons for child-labor which I found interesting at first, but which I have since heard brought forward so unvaryingly and frequently that they became sad as well as monotonous. Some of these are exceedingly plausible.

We are told that the operatives are far better off in the mills than they have ever been before. It is a pity of course that necessity impels the parents to let their children work, but such work is a grade higher than existence on the country farms.

In a sense this is true: many of them are raw country folk of a low grade who have come from scattered farms, on which they made but a bare living, subsisting by mortgaging next year's cotton-bale for this year's food. Their homes were mere shanties, where they lived with the numerous progeny in one room, knowing not the chink of dollars and cents, unkempt and often addicted to the snuff habit. As mill operatives, their homes are at least an improvement on the shanties; their earnings as a family are fairly good (although the individual wages are small, varying from 10 cents to 30 cents for a child, 50 cents to $1 for a woman, and 65 cents to $1 for a man, a day); unheard-of luxuries, such as lace curtains and a bank account, were cited to me as indications of their bettered condition.

One mill manager kindly took me for a

beautiful drive into the country to show me the miserable dwellings of the class from which he drew his mill operatives. Bad enough surely is the life of these shanty-children in the country; but I saw clearly enough to note their rounded limbs and the flush of health in their cheeks, in contrast with the wan and aged look of the mill babies; and I reflected that lace curtains are a poor exchange for children's lives.

I listened to the glowing accounts of the wealth this industry was bringing to Alabama, of the increased value of farm produce and farm labor, of the benefits to trade from the growing needs of the operatives, and I realized that the one class never thought of was the helpless little children whom their parents were sacrificing for momentary prosperity, and who were being injured by the very industry which should be their greatest blessing. Properly regulated, the factory is an immense improvement on the isolated farm, for it brings the people into association with others. But unregulated, no! The children become the victims.

Again, the laziness and general worthlessness of the parents are cited—in proof of which grown men, whittling on the stoop, would be pointed out to me, while children and wives were in the mills. Some are undoubtedly lazy, but they have often been forced by circumstances into an acquiescence which has degenerated into complacency. They come from the country lured by reports of free schools and unlimited work. On arrival at the village they have either been obliged to sign a contract promising the work of four or five members of their family before they are allowed to rent a cottage, or the children have, from the sheer pressure of the habit of the place, gone into the mill. Three little ones count more than one father and are given a heartier welcome. As the rents of their cottages are suited to their low wages, other dwellings in the vicinity—if there are any—are impracticable.

Often the whole family, except the baby actually in the cradle, is in the mill. Two or three of eight years or older might be on the pay-roll, but the youngest paid worker can get through her "side"—at ten cents a day—with more ease if she has her little brother of six to help her. I have seen a boy under four beginning his life of drudgery by pulling the yarn off bobbins to make bands. A manager courteously conducting me through the mill would often explain—at some exclamation from me—"These very little ones are not working; they are only helping their brothers and sisters." I accepted the explanation until it dawned on me how numerous were these wee unpaid assistants. It is a biting comment on the dehumanizing nature of competition that generally kind-hearted and humane men should be willing to profit by the labor of little children—without even a wage return for their work.

The frequent plea that the people would starve were it not for their children's earnings is untrue. In the first place the child seldom earns even its own food and clothes, and several intelligent operatives who had had children in the mill told me that anything these earned was so discounted by ill health that they had taken them out. It is a well established economic fact that the family wage is not increased by child-labor. If the law forbids the working of the children, the older members of the family must be able to earn enough to support the younger. In time the family wage is actually lessened by child-labor, for the standard of health, education and needs are lowered. In arguments bearing on the hardships to individuals of stopping child-labor, "the poor widow" bulks large. One's anxiety for the poor widow diminishes when one finds that she is made the excuse in every country for retaining child-labor, and that when investigation is made, her contribution in the shape of baby laborers is about two per cent. (as recently shown in England).

In spite of the excellent system of ventilation adopted in most of these factories, by which the atmosphere is rendered bearable, a very little inquiry shows that it is by no means as healthy as one would be led to believe from the eulogies of those who are seldom in it. The flying lint often brings on throat and lung trouble, while pneumonia resulting from the sudden change from the hot factory to the early morning and the late evening mists is not uncommon. These conditions tell far more frequently and fatally on the unformed constitutions of children than on the grown workers. In one factory I found a little girl aged ten, in the "drawing in" room, where every individual thread of the warp is drawn through the "harness" of the weaving loom. She could earn as much sometimes as 75 cents a day, though alas, at the expense of the

beautiful blue eyes she turned up to me as I spoke to her. Her mother told me that she brought her youngest daughter, aged seven, into the mill with her, and although urged to allow her to work, there being many as small in the mill, she would not allow it. Yet without doing any work the child had lost in weight in a year through confinement in the mill atmosphere. Over and over again I was told that the mill was a "playground."

"If anyone tells you that," said a superintendent to me with concentrated scorn, "he either doesn't know what he's talking about, or he's telling a downright lie. I've been in the mill since I was eight years old myself, and I know. We're no charity institution."

"What do you do when you are very tired?" I asked a little girl, putting my mouth close to her ear to make myself heard. "I cry," she said, shyly. She would make no reply when I asked her what happened then, but another child, who had literally poked her head into the conversation, put in tersely, "The boss tells her to go on with her work."

There is a difference in the attitude of the managers and of the practical superintendents towards the question of legislation. Many of the latter are secretly in favor of it. They are in contact with the children all day long. Children need a great deal of supervision and are often wasteful workers. When questioned closely almost all acknowledged that those under twelve are more detrimental than helpful as workers.

The strongest objection to preventive legislation is, of course, the desire for cheap labor. To the shame of the Northern capitalist be it said, he has carefully fostered this superstition in order to obtain the cheap and submissive labor that he believes children give. In 1887 a law was passed in Alabama limiting the hours of children's work in factories to eight a day. At the instigation of Massachusetts mill-owners this law was repealed in December, 1894, on their promise that these mill-owners would establish a factory in Alabama. Today the mills thus established are working at least fifty children under twelve years old for eleven and three-quarters hours a day. It is difficult to see the exact benefit to Alabama since all the capital in the Alabama City mills is northern and eastern, and the dividends go out of the State. The village is a beautiful one, managed with much moral and sanitary severity, but no seeming philanthropies, such as natatoriums, churches and libraries (for people who cannot even read), can atone for this deliberate demoralization of the Southern conscience and injury to the future of her industries by those who in their own State are forbidden to work children by the best factory laws in the world. In Massachusetts no child may go into the mills under fourteen, and only then after having attended school for at least a year.

This is not an isolated instance. Much of the opposition to the passage of a protective law through the Southern legislatures is made by the representatives of Northern corporations, who are taking full advantage of the possibility of child-labor. In eleven mills I visited, owned by Northern capital, there were twice as many children under twelve as in thirteen owned by Southern capital. The total number of children under twelve in the mills of Alabama (including the unpaid "helpers") I computed to be about 1,200. This number is not stationary or diminishing; on the contrary, it is steadily increasing, and the experience of the other Southern States proves that it must be so. In one of the older mills, they told me that the children were younger and more numerous than they had ever had them before. This question has a graver complication in Alabama and throughout the South than it has had in any other part of the world. It is inseparably connected with the color problem. The peril of coming illiterate generations, which confronted Massachusetts in 1870, from the same cause of child-labor, faces the Southern States, and threatens at the same time the supremacy of the white laboring classes over the colored. This rapidly growing mill population is entirely composed of white people. As a correspondent wrote to Labor Commissioner Lacy in North Carolina: "The illiterate negro sends his child to school; the illiterate white man sends his into the cotton mill." In most of the Southern States an educational test for voting is either in force or inevitable in the near future. The white man, to whom the test is not applied, has not the stimulus that the negro has to learn to read. This aspect of the question alone would lift it out of the region of purely economic or business considerations into the platform of the widest public concern. Let us see what it means in other States besides Alabama. Statistics are scanty and difficult to obtain, but there are

some established facts which are significant enough.

In Alabama the proportion of such young children to grown workers is between six and seven per cent., or between 500 and 600 in the twenty-four mills I visited. In Augusta, Ga., a count was made in June, 1900, through eight mills, and 556 children under twelve were found working. In South Carolina Mr. John B. Cleveland, president of the Whitney mills, giving evidence before the legislature, stated that thirty per cent. of the operatives in the Whitney mills were under twelve, and Mr. James L. Orr, president of the Piedmont mills, South Carolina, that twenty-five per cent. of his machinery was run by such children. The statement sometimes made that the number of children affected is so small that it is not worth public attention is not borne out by these figures, nor by the fact that in Georgia as many as thirty mill presidents appeared before the legislature to defeat the child-labor bill there.

It is important to notice that it is not only the cotton operatives who are affected by child-labor. During the recent agitation in England, which led to the age of the half timers in the cotton mills being raised from eleven to twelve, it was found both in Yorkshire and Lancashire that less than two-thirds of these were the children of workers in the mills. On the face of it no working population can have thirty per cent. between the ages of eight and twelve; so the presumption is that in mills where this is the percentage under twelve among the operatives, workpeople of other trades are sending their children into the mills to supplement their own earnings. I found this supposition confirmed by letters printed in the report of Mr. Lacy, the commissioner of labor, in North Carolina. In several, sentences like these occur: "I am not in the mill myself, but represent it with my children;" "I am a carpenter, but have had children in the mill."

In time, therefore, the earning, and with the earning the spending capacity of workers in other trades will be lessened, and the development of local trade be checked, even though the cotton mills may make large dividends.

Another disastrous tendency of unregulated child-labor is to substitute the woman and the child for the man. In North Carolina some of the mill-owners speak complacently of their operatives being "loyal and peaceable, because composed chiefly of women and children." Many managers expressed the hope to me that they might soon be able to do without men almost entirely.

Prophecy about the cotton trade requires a map of the world. On the west coast of Africa, by the French, German and English, in Egypt by the English, cotton is being grown with as good a staple for manufacturing purposes as that of the Southern States. Cotton factories will rise in these places before long, with unlimited "cheap" labor, albeit unintelligent and incapable of any great development, and it will be possible to manufacture coarse grades of yarn and cloth at incredibly low cost. The ground of competition for the Southern States will then be shifted to the fine grades, which require intelligent, educated operatives, and the palm will fall to the place having the most technically educated workers. Chances for success seem small in the face of the largely illiterate cotton operatives of the Southern States. The waste and degeneration of these workers are the rankest folly. They are a splendid stock, in parts at least Scotch-Irish, spoiled somewhat by their isolation and the hard lives they have led, but capable of any development—more indeed than many of the foreign emigrant workers of the North. The one great advantage the North possesses over the South at the present moment lies in the education of the workers and the possibility of their physical development. How can the cotton operatives of the South keep their vitality when even the physical development permitted to the Negro children in the days of slavery is denied to the children of the poor whites? In England it has been proved that 4 to 6 hours a day in the mills for the children of factory operatives between the ages of 11 and 13 stunts their growth to the extent of 6 inches, and diminishes their weight by 22 pounds below the average English child, who is a full day scholar up to 13. What then must be the effect of 12 hours a day in a warmer climate on the children of a people unused to [illegible] doors?

Turning back once more to the purely human aspect of this uncivilized system, I would say that no array of facts and figures are needed by those who have seen it in operation. I am familiar with the slums of two continents, but I can say I have never seen a more pitiful sight than the mill children,

nor known little ones for whom the outlook was more hopeless. It is not only that they are pale, shrunken and bowed—they look as if their brains were hypnotized and their souls paralyzed. A friend of mine in Atlanta, thinking to give some of these little victims a treat, asked a number out to her place in the country and turned them into the woods to play. What was her distress and amazement to find that they did not know what the word or the thing meant. Children in America who do not know how to play! And dividends from these mills are used probably for philanthropy, temperance and missions! I even heard of one mill Sunday school where the children were told that God had put it into the hearts of good men to open a cotton-mill that they might earn money so as to be able to put a nickel into the missionary box!

The plea urged that the operatives desire no change seems to me especially cowardly. Knowing nothing of economics they imagine themselves deprived not only of their children's earnings, but of their own by any restrictive law. In every place where the operatives are intelligent and independent enough to form any combination their feeling is largely in favor of legal restriction of child-labor. This is so in North Carolina, South Carolina and beginning to be so in Georgia. The only possible thing to be done is for public pressure to be brought to bear on the Legislatures of the Southern States to pass a law with at least the following provisions:

No child under twelve to be admitted into the factory, unless a widowed mother or invalided father should be totally dependent on that child for support, and in no case for a child to be admitted under ten.

Night work forbidden and hours limited to sixty a week for children under sixteen.

A slight educational test required and three months a year in school up to fourteen provided for.

Northern and Southern capitalists should be warned by their work-people in the North and their fellow citizens to withdraw their opposition [illegible] of such a law.

The opposition at present is immense. When I returned from my tour of investigation in Alabama I found the whole community, except those directly interested financially in cotton mills, on my side. The press, the pulpit, the schools, the women in their various clubs, took the matter up. A bill was presented at the second session of the Alabama Legislature, in the upper and lower houses, by gentlemen who had no connection with the labor movement.

The mill owners immediately engaged two able lawyers, who were also professional lobbyists, to deal with the members of the Legislature on the subject. Representatives were warned that the local bills they had been sent up to pass would have small prospect of success should they vote for a child-labor law. At the hearing before the joint committees of the House and Senate the Senate Chamber was packed to overflowing. The mill owners' interest was represented by a lawyer, who was also the president of a cotton mill, the owners of which are "philanthropic" Northern people—a corporation clergyman and a railway attorney. None of these men ever touched on the pros and cons of child-labor. The sincerity of their arguments may be gauged by their bringing forward a miserable little petition against the bill, written on the official paper of a very small mill, and signed by seventeen of its operatives.

The hearing was simply a public bluff. It appeared that the rejection of the bill had been settled beforehand in spite of public excitement upon the question. Similar defeats were recently experienced in Georgia and South Carolina, where the educated women have been making gallant efforts to get the need for child-labor legislation recognized. It is evident that only concerted and organized action through all the Southern States would be of any use on the part of all those interested in the question. Arrangements have accordingly been made to have the subject thoroughly ventilated and an agitation carried on for the introduction of a practically uniform bill into all the Southern Legislatures. A child-labor bill passed the Tennessee Legislature in the spring of this year, and has probably sounded the first stroke of the death knell of this abominable system. I cannot help hoping, though it seems visionary, that this is what the fight against child-labor may do in the South. The discussion of the subject reveals how closely the interests of all classes are united and the danger and futility of permitting the exploitation of the weakest.

What shall it profit the South if stockholders, North or South, gain the whole dividend and these States lose their children? "There is no wealth but life."

THE ART OF SAVING CHARACTER

THE TREATMENT OF DELINQUENT BOYS IN INSTITUTIONS AND IN THE GEORGE JUNIOR REPUBLIC CONTRASTED

BY

R. E. PHILLIPS

PHOTOGRAPHICALLY ILLUSTRATED BY M. W. COOPER

THERE is no greater problem in practical philanthropy than that of making useful citizens of the youthful unfortunates of our big cities. The following comparison based on personal observation shows two tendencies: to make criminals by the method of institutional "reform;" and citizens by the newer "republic."

First, then, the institution. In two typical examples—the New York Juvenile Asylum and the House of Refuge on Randall's Island—the population averages eight hundred; in the "Refuge" delinquents of both sexes, varying in age from six to twenty; at the "Juvenile" both destitutes and delinquents. In both institutions prison government prevails.

At the "Juvenile" the routine begins with a three weeks' detention in the "House of Reception." Here, after a physical examination, candidates are taught "obedience." Then follows a fortnight of "quarantine," a dingy little yard shut in by high walls and ruled by a guard. The children call it "soak." It is really a precaution against disease; to the children it is detention.

The twelve acres of the grounds are enclosed by a "substantial stone-wall and picket fence," the buildings and yards shut in by an additional "brick-wall eight feet high." The inmates are prisoners, watched constantly by guards and with no opportunity to escape. In one of the boys' play-grounds an imaginary line halves the yard in the centre, across which no one without special permit may pass. Violations of the rule are punished, not by "spanking" as formerly, but by class-room methods or by depriving the culprit of food.

In the "Refuge" there is a step in advance. Here to the "stone-wall" confinement is added rigid prison discipline. No talking is allowed during meals; in the work-shops at the entrance of an officer the inmates rise and stand at salute until the officer passes; in the evening they file to bed and retire on signal —"Shoes," "Kneel," "Bed," and so on. The older boys are confined at night in cells, of which there are more than two hundred, serving also as places of solitary confinement in cases of disobedience. In such cases the culprit must stand up, and the fare is bread and water with one service of meat and vegetables every other day.

Carefully inspected school work covering public school studies takes half the time, and manual training half. In the "Refuge" the products of the manual training class were formerly sold, but through a decrease in the demand the cane chair-seat industry is dying out and in the woolen stocking room where I saw several thousand pairs stored ready for market, I was told that the work had stopped because there was "no money in it." The trade schools in both institutions teach shoemaking, tailoring, carpentry, printing and the like. In addition, the "Juvenile" gives instruction to small evening classes in typewriting and telegraphy. This, then, is the system. What are the results? The superintendent of the "Refuge" recently said that omitting printing and floriculture the trade schools were unsatisfactory. It is stated that the shoes and clothing made at the "Refuge" are better than those of similar price outside. Moreover, from odd jobs assigned last year the institution saved more than ten thousand dollars at the low rate of seventy-five cents a day. At the "Juvenile," it is true, a small sum is set apart monthly for special work. As an offset to the lack of incentive, class-room records are sent to parents, guardians or "friends."

Here is the way one small boy summed up the "Juvenile." "Well," he said, "you gets up in the morning an' goes t'rough de same game every day fer eighteen months—ef you'se lucky. You works an' you don't get nothin'. An' what is it when you gets

CLEANING THE STREETS

SELLING GOODS AT AUCTION FOR DEBT

CONVICT GANG
Working on stone pile under guard

NIGHT WATCH

t'rough?" This boy was "doing time" in another institution. For the majority "getting t'rough" means a return to the old life. To this there is one notable exception. For many years the managers of the "Juvenile" have "placed out" certain inmates every year on Western farms. The results in almost all cases prove successful—not, however, as claimed, because of previous institutional training. The manager of a large "placing out" agency told me that of his candidates, from all sources, those with previous training in institutions were the least independent and least trustworthy. Last year, moreover, out of eleven hundred and sixty discharged less than one-tenth could be "placed out." Over one-half were returned without occupation to their old surroundings. As a result, to both these institutions one-tenth are re-committed —some for the third and fourth time. For the rest it is a matter of record on the authority of a former superintendent that one-half the inmates of the Elmira Reformatory, a State penal institution, are graduates of other institutions. This fact shows that present institutional methods produce criminals and

State dependents rather than useful and independent citizens.

In striking contrast is the George Junior Republic at Freeville, N. Y. This was started in the fall of 1895 by Mr. W. R. George—the result of several years' experience with delinquent children in New York City. Indeed, the first step toward the "Republic" idea was the founding of a boys' club in the vicinity of Eleventh Street and First Avenue in 1890. The next step was to take a number of the street children to the country for the summer. Over two hundred children had a two weeks' outing. But the farmers nearby demanded protection. Moreover, pauperism began to show itself. The children, after receiving food and clothing without work, demanded them as a right. This led to the principle of the Republic—"nothing without labor." At this time, too, the "jury" system was tried. Finally the George Junior Republic was begun.

At present the Republic Association owns about two hundred acres of rich farming land with suitable accommodations. Part of these—the hotel, for instance—are owned and controlled by "citizens." Moreover, the children make their own laws, elect their own officers and work out their own questions of money matters and punishment. Their constitution provides that Mr. George (or "Daddy" as they call him) shall be president *pro tem* of the Republic in case the office falls vacant. He can also veto new laws. "But," said Mr. George the other day, "I don't consider it my place to interfere. The 'citizens' are the first to suffer from mistakes and so the first to correct." In fact, Mr.

THE POLICE COURT
Swearing in a witness

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building was needed, the carpenters who had previously built the hospital, entered into competition with outside firms, underbid them and got the contract, amounting to several thousand dollars. In all departments of manual labor—masonry, carpentry, farming, printing and the like—wages average about ten cents an hour. Extra pay is given to those holding "government" positions. It is interesting to see what is done with the money. There are about one hundred citizens. Five hundred dollars is the average amount in circulation, reckoned in the special aluminum currency of the Republic, which is redeemed at twenty cents on the dollar when a citizen leaves the Republic. Naturally the larger part is controlled by a few "capitalists" among the older and more thrifty citizens. But all have the handling of the money they earn. Interest on loans has in some cases gone as high as twenty-five per cent. a month. Now, however, all interest is fixed at a regular legal rate. "Going bail" is the only risk un-

dertaken without adequate security, but only those get bail who are considered "safe."

The principle of protection of property is the basis of the unique legal system of the Republic. In this system the first step in proposing a bill is to file a written copy with the Secretary of State. If passed by a majority vote of the town meeting it is referred to the President. His approval makes it a law. In case of veto it becomes a law only by a two-thirds vote of all citizens. The laws vary from restriction of larceny to nuisance and disorderly conduct. For instance, smoking in this Republic is punishable by a fine of five dollars or five days' imprisonment; for the second offense five dollars and five days; and for the third, ten dollars or twenty days, or both. For reading obscene literature, or having it in possession, the fine is "not less than one dollar nor more than five and confinement in the workhouse from one to ten days." Again, if a policeman "sasses" a Police Commissioner, he is warned in the first instance; in the second, fined five dollars; and in the third, discharged. This is called the "Sedition Law." It is further provided that anyone who has been in jail must "take a bath and change his clothes before sleeping in any of the hotels of the G. J. R."

In the majority of cases the trials are by jury. The first or "petty" jury, consisting of four citizens, requires a unanimous verdict. The Grand Jury (six members) requires only a majority. I was allowed by special permission to attend one of the secret sessions where the District Attorney was pleading for an indictment for larceny before the Grand Jury. A small citizen—a girl—had bought a pair of slippers at the Republic store for fifty cents, and sold them for seventy-five, but instead of delivering the goods sold them again for fifty cents more. These facts were brought out from witnesses. Then the prisoner was brought in. In spite of her plea of innocence the jury returned a "true bill." All this, with the release of the prisoner on bail, was intensely serious. There were, however, one or two humorous moments. For instance, when the court was called to order one of the jurors was missing. A recess was taken to find him. Presently the missing member appeared before the court house. Immediately there was a tumult. Everybody leaned out of the windows and yelled at the delinquent

ADDRESSING THE TOWN MEETING

juryman. He paid no attention until one of the bigger boys shouted out, "Shandy!" "What?" "Aw, you knows very well what—come in here or I'll punch your nose!" That settled it. "Shandy" appeared and deliberations proceeded.

Later, as this was her second offense, the prisoner was sentenced to two months' imprisonment in the "reformatory." She was led away crying. This is by no means the severest penalty. Prison to the boys means work on the "gang" without pay on fifteen cent meals. The girls wear convict stripes like the boys; and in addition the law provides

IN THE CARPENTER SHOP

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VOTING FOR THE REPUBLIC'S OFFICERS

visitors, the boys instead of working used to bring in apples from neighboring orchards. Apples sold for ten cents apiece. A thirty per cent. tariff abolished this "easy money" and made the "financiers" work. In another instance a "blacking trust" was formed. Two companies bought up all the blacking in the Republic and charged twenty-five cents a "shine." They refused, however, to pay a fifteen per cent. tariff on profits and so eventually went out of business. The revenue receipts together with a poll-tax of twenty-five cents a week have already reduced the former debt of five hundred dollars about one half, and pay for running expenses without deficit.

Even school work is paid for at the rate of two dollars a week to compensate in part for time lost from regular "jobs." But, vice versa, nothing is given without work, and no excuse is taken for failure. A short time ago a cottage built by the Association was offered for sale. Six boys formed a company and agreed to take it at thirteen hundred dollars, to be met by quarterly payments of fifty dollars apiece, with interest at two per cent. a month on the unpaid principal. After several payments the Association found that the boys were unable to keep competent help. No one would hire out to them. As a result the place, as the boys admitted, was "on the bum." They received notice, therefore, to vacate on the ground that one of the quarterly installments had not been paid on time. At present the cottage is rented, and the Association is looking for more responsible buyers.

Compared with the institutions the results here show a most remarkable contrast Though the boys and girls associate on equal terms, there has been only one instance of trouble. This was an attempt one night to enter one of the girls' cottages. The culprit was caught in the act and at once discharged. Considering the class of children that come here this record is most noteworthy. The great majority are delinquents from eight to eighteen years of age, whose offenses vary from convicted murder, larceny and burglary to disorderly conduct and truancy. In fact, general "badness" accompanied by ordinary intelligence is, according to Mr. George, the chief requisite for admission to the Republic. To avoid the reproach of a reformatory, however, a few are received from good homes and without previous records, though these cases are almost invariably the least satisfactory.

HOW THE SETTLEMENT LOOKED WHEN THE IDEA OF A REPUBLIC WAS FIRST FORMED

From all sources the number received since 1895 is two hundred and forty-seven. Of the whole number only one has been arrested after leaving the Republic. Another employed in a factory near Freeville was accused of stealing a wheel. A third has turned out to be a non-worker and, while guilty of no offense, is not yet self-supporting. In all seven have been marked "unsatisfactory." That is, they either have no positions or have not filled them successfully. Of the rest four are working their way through college, five are in preparation and the others, without exception, hold good business positions. The naïve reply of a little girl who was asked "What do you little citizens possess that we older persons do not?" who answered "Self-control," shows the idea the Republic stands for. In short, the practical results that come from a clear appreciation of the broad, underlying principles of the Republic differentiate it from the "institution," and tend to give society a citizen rather than a criminal.

THE GEORGE JUNIOR REPUBLIC
As it looks today from a distance

GOING TO SCHOOL
ull County, Ohio. Scholars of the Primary and Grammar grades

'MAN HAS THE BETTER OF IT

NT OF ISOLATION BY CENTRALIZED
MAIL DELIVERY, TROLLEY LINES AND
HE EVOLUTION OF NEW CONDITIONS

BY

FRANK McCLURE

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lying districts to the central building in coaches. The adoption of this plan, locally called the "township school plan" was at first vigorously opposed. The more conservative were not always ready to depart from the traditional school-house, for all its admitted deficiencies. The idea had its origin in Massachusetts nearly a quarter of a century ago, but it did not spread rapidly from one State to another. About six years ago, however, the plan in an improved form was tried in Ohio—in a township named Kingsville, with such great success that it became known throughout Ohio and Illinois as the Kingsville school system, and it is being generally adopted in those States—this in spite of the necessity first to have the State school law changed, a new unit of school taxes adopted and other such changes.

Kingsville offers a good example of the new system in practice. The school coaches each carry about twenty-five children. They are so built that the sides, the front and the back can be opened or shut as the weather requires, while the driver is comfortably protected in stormy weather. A coach must stop at the home of each pupil in the district, but if the

A MODEL FREE DELIVERY WAGON

This wagon may be seen daily in Carroll County, Maryland. There the Government, as an experiment, installed a service with superior facilities—a team, two men, and a vehicle with numerous zinc-lined compartments for mail

child is not ready the coach moves on, and the pupil is marked tardy. This system placed such a premium on punctuality that in three years at Kingsville, only one case of tardiness was reported from the outlying districts, while there were several pupils late during the same period from the immediate neighborhood of the central building.

An important feature of the new system is shown by the record of attendance. Gains of from 100 to 150 per cent. have been chronicled. At Kingsville, situated as it is near Lake Erie where cold winds are prevalent, the plan of protecting children en route from the home to the school has resulted in a higher standard of health among them.

In Kingsville five teachers are employed at the central building, while in the several districts before the adoption of the centralization plan, seven teachers were required. The cost of heating and maintaining the little district schools is avoided, and the central building is heated by modern appliances. It was found that under the new system the tax-payers have saved in three years $1,000. The expense per capita was reduced from $22.75 to $12.25, and this after good teachers had been employed at good salaries.

The township high school marks a step further than the graded school of the rural districts. It provides for a high school course within easy reach of every country boy and girl.

Farm property is greatly enhanced in value if it be on the line of school coaches, whether the central school includes a high course or not. Vacant farm-houses in such localities are few. Those who prefer rural life, but

THE POSTMAN'S FIRST VISIT

Rural folk gathered at a country store to witness the initial arrival of the mail wagon in their vicinity

A MODERN TOWNSHIP SCHOOL BUILDING
As provided under the centralization school pian

who have gone to the city to give their children a better education than was obtainable in the district school, move back to the farms. The more progressive farmers who believe centralization in their particular township to be out of the question, are inclined to buy farm land in townships where the system has already been established, just as they aim to get within the scope of rural free delivery, or in close proximity to a rural trolley line.

The rural free-mail delivery system, although yet so young, has passed the experimental stage. It has been demonstrated that it has increased the postal receipts. Its value to the rural districts cannot be estimated in dollars and cents. The last report of the Postmaster-General shows that at the beginning of the fiscal year 1899-1900 the number of routes in operation was only 391, and most of these had been running less than twelve months. On the 15th of November, 1900, the number had increased to 2,614, reaching into forty-four States and territories, and serving a population of 1,801,524. The number of applications then pending and awaiting action nearly equals all those then granted. Many have been established since.

The estimate of the increased receipts and the savings that can be effected by the general adoption of rural free delivery is based on figures which have already come from different parts of the country. In Carroll county, Maryland, for instance, the saving in three months' time from the discontinuance of fourth-class post-offices and what are known as "star" mail routes amounted to $2,805, and the increase from postal receipts, which is accounted for by the fact that more letters are written when there is a quick way to deliver them, was twenty-three per cent. Reports from other sections of the country show increased receipts aggregating from 40 to 180 per cent.

Rural delivery routes are usually from twenty to twenty-five miles in length. Each is expected to serve 100 families. No carrier is paid more than $500 per annum. He must furnish his own horse and vehicle. The Government also holds this occupation open to women, and in a number of instances they have already been employed.

The wagons differ greatly in construction and appearance. Some are crude and some modern. Mere buggies are used in some sections. A few carriers ride bicycles in good weather, while others ride horseback nearly all the year round. In Westminster, Maryland, there is a model rural mail delivery wagon, drawn by two horses, and in charge of two men. One drives the team while the other is sorting the mail in the car, which is, by the way, nothing less than a complete

A TYPICAL DISTRICT SCHOOL HOUSE

post-office on wheels. This vehicle is eight feet long, is well lighted, and is entered through a sliding door. Its exterior is painted in blue and lettered in gold. The interior is equipped with sixty-four letter boxes lined with zinc.

The most recent provisions of the rural delivery system make every wagon a post-office and a money-order office as well. Stamps are sold, money-orders are both issued and paid, and letters are registered. The carriers are allowed to deliver packages, other than mail parcels, when such tasks do not interfere with prompt service.

The farmers were at first inclined to look at the plan as short-lived. The receptacles which they prepared for the mail were, in thousands of instances, of the crudest material that could be found about the farms. Tomato cans, stove-pipes turned on end, cigar boxes and tin pails all served for mail boxes, and one farmer in Washington county, Pa., constructed a box by making over an old hobby horse and mounting it upon a stake in front of his gate. The carrier often discovered the boxes nailed to the nearest fence, or attached to a tree half way between the road and the family residence, instead of being within easy reach of the mail wagon.

It is estimated that the value of land along rural delivery routes has increased from two dollars to five dollars an acre. Then, too, there is an educational value in the rural free delivery, in that thousands more magazines and periodicals are finding their way to people's homes.

In spite of the many advantages of the rural free delivery, petitions for its discontinuance are sent to Washington from towns where fourth-class post offices have been abandoned. This opposition generally comes, however, from the postmaster or the country merchant. The claim of these merchants that rural delivery is destroying their business is true, but this is not an unmixed evil.

The oldest route in the United States runs out from Hope, Indiana. More than 200 carriers are now making daily rounds within the boundaries of this State. If they went in a straight line in relays they would cross

A CROSS ROADS CORNER

On a rural free delivery route in Indiana. Private mail boxes of farmers residing on thinly populated roads in close proximity, but off from the daily course of the carrier, general receiving box for letters to be collected on the left

FARMERS DELIVERING MILK TO A TROLLEY CAR BOUND FOR THE NEAREST STATION

the continent every day. The total length of the routes is 5,395 miles, and the area covered is 8,914 square miles. They serve 196,712 people who two years ago were compelled to travel from one to ten miles for their mail.

An important condition which the Government imposes on all those who desire the continuance of rural mail delivery, introduces another important matter of rural development—good roads. The department intends to withdraw the free delivery system from sections where the roads are not kept in good condition all the year. The successful centralization of schools, too, depends in part upon good roads. It is said that the farmers of a certain vicinity in Southern Indiana lost $2,000 on hay alone in a single year, because of the condition of a certain road.

The trolley line is undoubtedly the greatest single financial boon to the country districts. Aside from its advantage as a carrier of passengers, the establishment of its freight and truck lines means economies to the farmer of which he did not dream a quarter of a century ago. Farmers have been known to send to market as small a parcel as a pound of butter. The trolley car can carry freight at a rate of five or ten cents for a few miles, while the steam railroad's rate for freight is never less than twenty-five cents.

Near a large city the farms along a trolley line become suburban property inhabited by the rich, who handsomely improve the land. But a conservative estimate of the increase on land in exclusively rural districts may be placed at forty per cent.

As in the case of the centralization of schools, the trolley systems bring back to rural life the country-loving people who went to the cities to escape isolation. The rural population is also increased by many city people who desire to build fine houses, but who will build them where taxes are lower than in the cities. The telephone also is doing its important work in putting rural life on the same level of conveniences as town life. Thus, by all these agencies, the country-dwelling man is getting not only his share of modern advancement, but he has his fresh air and his greenery and his independence to boot. He can preserve his own individuality and still live in the middle of the world.

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LLMAN, BANKER

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BY

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Mr. Stillman did not assume the presidency of the City Bank for the emoluments of the office. His father left him a fortune, and as a cotton merchant he added very materially to his inheritance. But the directors of the bank were shrewd men, and they knew that they were making no mistake when they elected their youngest colleague as chief officer. He soon made himself intimately acquainted with the bank's affairs, its customers, its credits, the standing of its correspondents, and in every department he began to make connections which were intended to strengthen further and expand its business. This became apparent when the cash of the Standard Oil Company and other large corporations began to come in. In four or five years the bank and its president were known all over this country and in Europe. A few years after he took office he saw the tremendous possibilities of the foreign business, and he organized a foreign exchange department and placed in it experts to do the work which the reputation of the bank and the ability and high character of its president were certain to bring to it. More than once he has upset the calculations of foreign exchange experts, and surprised Wall Street by shipping gold to Europe when the export rate apparently did not warrant it, and by importing it when rivals figured that the shipments must cause a loss.

The bank's relations to the Government are well known to the public. It has long acted as a United States depository. Among other disbursements it has made for the Government, was the payment to M. Jules Cambon, the French Minister, of $20,000,000, which the United States paid through him to Spain on account of the Philippine Islands.

Naturally Mr. Stillman is a very busy man. He works patiently and without hurry. Before coming downtown he usually visits either the Bank of the Metropolis, the Lincoln Bank or

the Columbia Bank, in all of which he is interested. He arrives at the City Bank about twelve o'clock, and at once summons the veteran vice-president for a statement of the bank's condition. His appointments for the day are then placed before him, and necessary orders for the heads of the various departments are issued. Visitors begin to call, and anyone with business connected with the bank is promptly admitted. Mr. Stillman is not a methodical man, but he insists upon the best methods in the bank. He seldom interferes with the conduct of the different departments but he holds every head personally responsible and his excellent judgment of men is shown in the smooth running of the delicate machinery of the great institution.

Mr. Stillman's connections with other corporations as director and trustee are more numerous perhaps than those of any other man in New York. He holds office in forty-one organizations, including banks, trust companies, real estate, railroad, gas, timber, copper, warehouse, and life insurance companies. He is president of the Second National Bank also, and vice-president of the Fidelity Bank, both of which, besides others, are under the control of the National City Bank. Despite his other duties, he finds time to attend to nine-tenths of these directors' and trustees' meetings. After business is over for the day, and often early in the morning, Mr. Stillman may be found on his bicycle, of which he is passionately fond. He passes his evenings quietly at home or at the opera, and is a liberal patron of the arts. In the summer he spends some time on his yacht or at the Stillman villa at Newport. His charities are numerous but kept as far as possible from the public eye. His gift of $50,000 for the erection of an infirmary for Harvard University is one of his quiet benefactions.

While he holds large blocks of stock for investment, he never touches the stock market. The ticker has no charm for him, and it is doubtful if he ever spent an hour in endeavoring to master its abbreviations. He is not an operator, or a speculator, or a manipulator, or a promoter. He hates gambling. He realizes as bank president what a tremendous trust is imposed in him. He is a banker; his heart is in banking, and it is conceded by his rivals that he is one of the most successful bank presidents that the nation has produced.

THE CHARACTER OF AMERICAN POLICE

PRESENT AND RECENT EXAMPLES IN NEW YORK, CHICAGO, PHILADELPHIA, BOSTON AND ST. LOUIS

BY

FRANKLIN MATTHEWS

TO come squarely at it, the police force of nearly every large American city is under suspicion. And here you have your municipal problem in a nutshell. The suspicion amounts to this: that for money (blackmail is a better word) crime is not only tolerated but encouraged. The higher the rank of the police officer, the stronger the suspicion. Now, it is only one step from the encouragement of vice, for the purposes of loot, to an alliance with criminals. Indeed, in some of our large cities the robbery of drunken men is permitted already by the police on the profit-sharing plan. Who is to blame for this alarming situation and what causes it?

When the head of the police force is bad the men under him are bound to be bad; and, when he is good, most of his subordinates have to be good, even if they do not wish to be so. Bishop Potter came near hitting the mark last winter when he said that the head of the police force should be a gentleman. He did not mean that the chief of police should be a "silk stocking," but a person of high character. A man like General Leonard

Wood, for instance, would be better than William S. Devery, late chief and now deputy commissioner of police in New York; General Chaffee would be better than Kipley, lately chief of the Chicago police. In other words the chief of police ought to be a man with a keen sense of honor.

A police force is essentially a military force, and the chief of police in New York City, who has about 7,000 men under him, ought to have the same high character and the same kind of abilities that a Major General has. In cities where the police force numbers from 2,000 to 5,000, the chief should bear favorable comparison with a Brigadier General, and so on. Such a man should have the capacity and the character to command the respect of gentlemen as well as of gamblers and thugs. His friends should not be lawbreakers but the men (not necessarily professional reformers) who stand for the strength of the community in business and professional circles. He should have an absolutely clean name and should be a man whose integrity could not be under even the shadow of suspicion. How does a Devery of New York or a Kipley of Chicago or a Quirk of Philadelphia, or the head of many another other police department of the country, measure up by this standard?

The uprightness of such a man would affect every man under him. His personal character would be felt instantly, stimulating those of weak resolution, destroying those of criminal tendencies. Can an honest, clean, able man exert such a power and do it almost instantly? Yes: for when Theodore Roosevelt was President of the Board of Police Commissioners of New York City this very thing happened. More than once I sustained close personal relations with him, amounting to confidence in many cases, and I know whereof I speak. Waiving the question whether his views about the enforcement of law were correct, there can be no doubt as to the effect of his personal influence upon the police force.

When he came into Police Headquarters with his quick stride—into that building where a criminal alliance has sneaked so often—instantly every policeman in sight would straighten up as if a current of electricity had been shot into him. There was no resisting it. Yet Mr. Roosevelt was not the chief of police. Between him and the chief there was a network of legal meshes, which almost made a complete barrier. But he broke it down.

He did that and more. Sustained as he was by only one of his three associates, Mr. Avery D. Andrews, who was of a different political faith, he nevertheless sent the force of his integrity down the line so that it was felt by the lowest man in the department. Character and not "pull" began to count at once. Men were promoted because they were fit. There was no open alliance with crime by the police of the city. Vice was made to seek cover. It was not stamped out (that is impossible), but it was not encouraged for the sake of money. The police, except in a few individual cases, ceased to blackmail. The proceeds of shame no longer increased the bank accounts of police officers, and they no longer decked out their families with finery and had fast horses for their pleasure. Justice was dealt out to the men on trial. More than once I sat beside Mr. Roosevelt as he presided at hearings. I have seen him stop to consider how he could be absolutely fair, and his decisions had instant effect as a result. I have been alone with him as one after another of the candidates for appointment came up for private examination as to their fitness. Searching inquiries would be put to them. To one man who was trembling from the severity of his examination I remember Commissioner Roosevelt said:

"You are the man Father So-and-so spoke to me about?"

"Yes sir, but I didn't suppose being a Catholic made any difference."

"Of course not; of course not," was the instant reply. "I don't care whether you are a Catholic, a Protestant, a Jew or a Gentile. I think you'll do. You tell Father So-and-so if he has any more men like you to send them down here. I pass you; go and see the other commissioners."

That policeman never took blackmail while Mr. Roosevelt was in power and it is safe to say that he has not done so yet. There were hundreds appointed like him. Many, alas, have fallen, but it is because a different kind of current went down the line from police headquarters.

And now a personal illustration to show what a bad man at the head of a police force can do. Four years ago I was coming from Pittsburg to New York on the Day Express. I got into conversation with a man who said

that he was the chief of police of one of the larger cities in Ohio. He showed me his shield to prove his statement. He had taken just enough liquor to be talkative, and he said:

"I had no idea of coming East until last night, but I made a touch and I thought I would blow it in. You see it was this way: I got a telephone message from the railroad station that three of the biggest crooks in the country were down there preparing to take a train. I jumped on a car and hurried down. 'What you doing here?' I asked. 'Nothin',' they said. 'We ain't done no job here and we ain't goin' to do none. We are just passin' through.' I knew they hadn't done anything in town and so I said: 'How much money you got?' 'Only a little,' they said. 'Come, that won't do,' I replied. 'Shell out or up you go.' I could easily have fixed 'em, put up a job on 'em or sent 'em up as suspicious characters, and so they had to give up. They had $1,500. I took $1,200, run 'em out of town and now I'm going to have a good time."

I haven't the slightest doubt he told the truth. I saw his money. He was the nephew of one of the best-known men in one of our Eastern cities, a man whom I knew well, and he was going East to visit his uncle. Comment on the character of the police force under such a man is unnecessary.

To go back to the New York police force: what happened after the Roosevelt régime when Devery became supreme? It wrongs no one to say that the police force was never so demoralized, nor so corrupt as it is in the year 1901. The pull has been reëstablished, and men have been fined not so much for wrong-doing as for getting caught. "When you get caught with the goods on you," said Devery in his coarse humor to one man recently, "stand up and take your medicine. I fine you thirty days' pay for gettin' caught;" and he thought this a good joke.

Now, Devery, the deputy chief in New York City, is in some ways a good policeman. Up to a certain point he has physical courage. He knows how to put down a riot in superb style. He can manage a big parade excellently. He can command instant obedience because he has that personal force which can terrorize his subordinates. He can "protect" a precinct and keep it clean, too, as well as any man. He knows how to be severe, and in his ignorant, rough, illiterate way he displays qualities of real leadership. He has been a policeman since 1878, and he knows every trick of the calling. His subordinates cannot fool him.

And yet, what a character he is to be practically at the head of the second largest police force in the world! How does he compare with a major-general of the army? Twice has he been on trial in the criminal courts, once for taking a bribe and once for gross neglect of duty. On both of these charges he was acquitted. Once he was dismissed from the force for alleged corruption. Once he was indicted for threats to defeat a fair election. He is the man who as captain said to his patrolmen on election day in 1893:

"There's goin' to be a lot of silk stockin's from uptown down here today to watch the polls. Don't let 'em get fresh with you. They ain't got no business down here, and if they try to interfere, you stand 'em on their heads."

Just before the last national election Devery ordered his men to defy the State election officers, and the doctrine of "knock 'em down" was promulgated openly. Governor Roosevelt had to interfere, and his threat of instant punishment sent Mayor Van Wyck scurrying around at night to undo the work of Devery. More than once has the corporation counsel decided that Devery has exceeded his powers. No man dares stand up against him in the department. Honest policemen have had to shut their eyes to vice and to gambling. On more than one occasion they have had to refuse to make arrests. It is no secret that a New York policeman dares not arrest certain men. Not only has vice flourished and a police alliance been formed with gamblers, but robberies have increased, and the shibboleth of the force has become the word "blackmail." This is not unjust or too severe. It is known to all men.

To illustrate the pernicious effect of such a system, let me cite the example of a certain police captain. I cannot recall a more pitiful case. Mr. Roosevelt made him a captain, and more than once said that he would almost stake his reputation on the man's honesty and high personal character. That captain has said to me: "Theodore Roosevelt is one of the best friends I ever had." And yet what has happened? Flagrant gambling has taken place under his very nose. Of course he knew it. To suppose that he did not is

absurd. "Hold-ups" and petty crimes have increased alarmingly. There is reason to believe that a gang of boy pickpockets is allowed to thrive in the precinct. When any of them are arrested a certain man is always sent for to release them on bail. There is something most significant in that. Charges of open alliance with poolrooms have recently been brought against that captain. He denies their truth with anger and pain.

I cannot believe that that man has shared personally in the loot. He enjoys the confidence of the leading business men of his district, men worth millions on millions. He has the friendship of the most important men of my own craft—the daily newspaper world. The utmost that can be said against him is that he has had to permit the open violation of the law in his precinct; and the only explanation, consistent with his long and hitherto honorable career, is that he has orders from "higher up." If he had the moral courage to say so, it would clear the immoral police atmosphere of New York City at once, and would leave him less damaged in public estimation than he is in the position he is now forced to occupy.

Can any one suppose for an instant that, if a man like General Leonard Wood or Mr. Roosevelt were chief of police, any police captain would have been forced into such a position? Yet that particular captain is not alone in his deplorable situation. There are others like him under the Devery régime—the régime of a man who was defeated by the chiefs of police in their national convention recently for president when he was a candidate, because of the terrible moral condition in the city which he has taken oath to guard and protect.

Before Devery (there being a slight interim between them) Thomas Byrnes was chief of police in New York. In many ways he was the cleverest man that was ever at the head of the force. No one ever said that he took "dirty" money, but under him the policemen were almost as bad as under Devery. And he got rich. The explanation was that he established the famous "dead line" in Wall street and kept "crooks" out of the money district. The grateful bankers, it was said, gave him "tips" and he became wealthy. Byrnes was a Czar. When objectionable persons came to town, he did not arrest them—the only legal thing he had a right to do; he simply banished them, even if they were innocent of crime or of intention to commit crime. He said "Go," and they went. They knew the penalty of standing upon their legal rights. Well, Byrnes got rich—legitimately rich, if you like—and the men under him said that they, too, had as much right as he to make money out of their offices. They tried blackmail, and the terrible disclosures of the Lexow Committee resulted. Mr. Roosevelt had the fight of his life to force Byrnes from office, but he did it. A partial transformation of the force followed.

Now let us look at another sort of man. Recently Benjamin P. Eldridge was retired for illness as Superintendent of Police in Boston after a long career in office. A subordinate retired with him, and the Police Board passed this resolution:

"Superintendent Eldridge and Deputy-Superintendent Burrill, incorruptible as they were in the performance of their public duties, have honored their profession, and they take with them in their retirement the respect and esteem of the community they have long and faithfully served."

Public opinion backed up this endorsement. Yet Boston was not free from vice. Doubtless, too, from time to time police officers profited by it, but, as a whole, the police force of Boston has not been suspected of encouraging crime. The man at the head of the force stood for other ideas, and the result was a comparatively clean force. Had Superintendent Eldridge—and no reflection is meant upon him—been even stronger than he was, there would have been fewer suspicions (and there were not many) against his subordinates. There were never suspicions of him so far as I can learn. The present head of Boston's police force is William H. Pierce. He is of the same type as Eldridge. A Boston police reporter of twenty years' experience—and no one in town knows more about police than these reporters—assures me that the police of that city are "comparatively clean." He adds:

"Pierce is a very capable man. He has been superintendent practically for two years. There have been a number of shifts in the department, which go to show that he will not tolerate corruption. Deputy-Superintendent O. H. Hanscom, in charge of headquarters at night, is also a man of high character. Deputy-Superintendent Coulter is another

clever man. He is highly educated and he is a great lover of history. He was graduated from Dublin University and he afterward studied in Germany."

Is there any doubt that there is reason for a lack of open alliance by the police of Boston with criminals for profit? How many students of history and university graduates are there in high places in the New York police?

Turn now to Philadelphia. In the late eighties Edwin H. Fitler was elected mayor. He had old-fashioned ideas as to honesty in public office. Before his advent it was a common report that one of the city officials of the town assessed only the moderate charge of one dollar a month on the six thousand saloons of the city, which existed before the days of high license, for keeping open side doors on Sunday. That brought him $72,000 a year. His total income from vice must have been not less than $100,000 a year. Fitler put in an honest man named Lamon for chief of police. In a few weeks a dozen of the most notorious payers for police protection were sent to prison. The city became clean in an ordinary sense. Then Stewart and Warwick became mayors. During their terms of office, from 1892 to 1900, Robert Linden, famous in police circles throughout the world as the Pinkerton man who broke up the "Molly Maguires" of Pennsylvania, was in charge of the police. From time to time there were hints of corruption, but none of them involved him. Linden was almost an ideal man for a chief of police, and if politics had not interfered with his administration it would probably have been on a plane of the highest efficiency.

The present head of the Philadelphia police is Harry M. Quirk, a man who got his training for public life in the rough school of practical politics. He was a brave soldier in the Civil War, but he had no police training when he was made a captain in 1884. Since then, politics playing a dominant part, he has risen to his present high office. I do not know that there is the slightest suspicion of corruptibility against him. But I do know that Philadelphia's police force has " de-
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openly charged, to warn them to close, and the office of Superintendent of Police has been relegated to a subordinate place. The Director of Public Safety, and, in some cases the mayor, assumes his functions. A lower state of politics probably never existed in any city of the country than exists in Philadelphia at present. The degeneracy of the police force probably can be attributed to this political downfall more than to a financial alliance with crime. The politicians in that city protect vice; it is altogether probable that they reap most of the benefits. The descent from the condition of affairs in the time of Lamon and Linden to the time of Quirk reveals what an important part character plays in keeping a police force up to a high grade of efficiency.

In Chicago there are signs of improvement in the police situation. A new chief, Francis J. O'Neill, has displaced Joseph Kipley, who, from 1897 to 1901, doubtless under orders, permitted what was probably the most complete debauchery of a police force ever seen in this country. I have personal knowledge of the situation in that city during those years. I remember sitting beside a police magistrate in Chicago, one who is still on the bench, all one morning. When he had heard the long list of cases he turned to me and gave me a scale of prices which the police charged for the violation of law. There never was a more complete alliance with criminals. I doubt if ever a worse condition existed in any city of the world than along the "levee," consisting of several blocks of State street, the chief thoroughfare of the city, and almost in the very centre of town. Robbery was permitted on all sides. Not only was there open gambling, but men stood in doorways and almost physically dragged you in. The professional bondsman in the station houses developed his business to a degree never known in New York. At election time "repeaters" were protected, and extra assessments were made on those who prey on decency to bear the expense.

I remember going to Kipley to ask him about it. He was as innocent as a lamb.
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said was that he wanted to make Chicago "a nice place to live in," and he wanted everybody to be "comfortable." All the crooks and gamblers were comfortable, perfectly comfortable, and somebody paid the bill. Part of those who paid were little children openly stationed in gloomy places about the streets to decoy men into places where they were robbed. Who paid the rest of the bill can be guessed easily. When I told the same story to Mayor Carter Harrison that I told to Kipley he became indignant. He seemed horror-stricken that such a condition should exist.

The new chief of police of Chicago is now trying to improve the force, but better, perhaps, than his efforts is the awakened sense of public sentiment. Under their present powers the civil service commissioners of the city are getting after corrupt policemen, and the outlook for a reign of decency is brightening.

St. Louis, strictly speaking, has no city police. They are servants of the State political machine. The governor appoints the police commissioners and they select the chief. The situation is not pleasing to the citizens, but so far as corruption is concerned, I am convinced that matters are not as bad as in New York, Chicago and Philadelphia. A peculiar public sentiment works in a wholesome way in St. Louis. There is no absolutely shocking condition of the streets at night as in our other large cities. The town is "wide open" in the sense that the saloons are permitted by the State authorities to do business openly on Sunday. Less than six weeks ago I went about the streets of St. Louis on Sunday. The open saloons were not offensive, and there was no disorder. Gambling is a felony there, and although it exists, as it does in all large cities, it is done under cover. Police reporters and well-informed citizens told me that the police were "fairly clean," except in the matter of political strife. The impression made on a visitor was that St. Louis, with the possible exception of Boston, is the most orderly, and outwardly the most decent, of all our great centres of population. Police traditions, also, play some part in this situation. St. Louis has not forgotten Chief Laurence Harrigan, "Old Tige," the relentless thief-catcher and the man of iron will. He retired from the force in 1898. Three times he was chief of police, and he was really the chief. He would brook no interference in control of patrolmen and officers. St. Louis never had a better chief, and the force was never under better discipline than when this man was in power who took pride in his work.

The present chief in St. Louis is Matthew Keily, who came up from the ranks. I know that he has the confidence of many of the best-known men in the city. He has now been in office only since last March. There has been no marked change in the force since he took charge. Perhaps if State control were eliminated he would do better, but even with that disadvantage the police of the city cannot be said to be in league with criminals and to be criminals themselves, as they are in other large cities. Mayor Van Wyck has said more than once that from the police standpoint New York is the best governed and most orderly city in the world. He should take a trip to St. Louis and walk about the streets, and find out how a city looks when vice and crime keep out of sight. I know of no city in the country (and I know them all with one or two minor exceptions) that is cleaner to the eye than St. Louis. Rich policemen do not seem to be numerous.

So much for the actual police situation in the leading cities of the country. One thing must be said with emphasis: never was a greater mistake or a more unjust assertion made than that most policemen of our cities are dishonest. Ninety per cent. of the rank and file in New York are clean and decent. They are sick at heart at some of the things that they have to do. As a rule they are honorable men. Let them face a riot and a braver force never existed. They would willingly do their full duty in all respects if they were allowed to do it. They despise having to raise corruption funds, as they often do. They would like to see the "pull" abolished and every man stand on his own merits. The powers of punishment by superior officers are so sweeping that they dare not open their mouths to the terrible conditions with which they come in contact.

If the citizens of New York want a better police force let them demand specifically that the party that wins the next election shall put in power as chief of police a man of the highest character. If such a man were appointed a purer atmosphere would come at once. For a clean and capable chief of police could effect a complete reformation.

THE GREATER AMERICA

WHAT OUR GROWTH AS A NATION MEANS—PROBABLE COURSE OF FUTURE EXPANSION—COMMERCIAL ABSORPTION OF THE WESTERN HEMISPHERE—OUR MANIFEST DESTINY—WILL IT INVOLVE FURTHER ACQUISITIONS OF TERRITORY?—CONDITIONS THAT MAY RECONCILE LATIN AMERICA TO OUR SUPREMACY

BY

FREDERIC EMORY

CHIEF OF THE BUREAU OF FOREIGN COMMERCE, DEPARTMENT OF STATE

IT is becoming more and more difficult to write in terms of soberness of the growth of the United States as a world-power. Nor is this difficulty one peculiar to ourselves. In the least friendly of foreign commentaries upon our progress, there is a tendency towards the use of superlatives which argues a similar embarrassment, even on the part of those who would naturally wish to minimize the facts. The truth is that our performance in almost every branch of material effort has been on so great a scale that the barest recital seems to savor of magniloquence. The United States is more conspicuously than ever a country of "big things," and it is drifting steadily towards a colossal bigness which alarms the world. Our most hostile critics no longer sneer at us as a nation of boasters. All of them admit the solidity, the aggressiveness, the crushing weight of our competition, and but few of them will deny that, springing from this industrial superiority, there are potentialities of intellectual and social influence which, in the end, may profoundly affect the whole human race.

American supremacy, in fact, is admittedly formidable not only in the realm of industry and commerce, but in the far wider realm of social progress and evolution of human thought, and it is thus formidable solely because it rests upon an industrial efficiency such as the world at large concedes has never before been seen. As Professor W. G. Sumner remarks, in a recent article "The Economies of Trusts," * "all the so-called 'higher interests' (science, education, religion, charity, reform, etc.) are dependent on wealth production," and the United States today being the largest, most economical producer of wealth, and in a greater variety of forms than any other nation, may be said to be the largest contributor to the intellectual and moral forces of the world. The quality of these influences may be disputed, but their magnitude and potency are recognized of all.

We may, therefore, preserve a reasonably decorous modesty, with no risk of serious wounds to our national self-esteem, if we rely almost wholly upon what others say of us in painting a picture of our present position in the world. Let us take but a few of the more striking expressions. The London *Financial News* of April 13, 1901, admits that present conditions point to the shifting of the centre of not only industrial, but commercial, activity and the money-power of the world to the United States. The supremacy in commerce, says the *Revue du Commerce Extérieur* of Paris of May 4, 1901, "is passing from Great Britain, which held it throughout the nineteenth century, to the great American Republic." "No competent observer can doubt," remarks Frederic Harrison, "that in wealth, manufactures, material progress of all kinds, the United States, in a very few years, must hold the first place in the world without dispute." In January last, Lord Rosebery pointed out to a British Chamber of Commerce that "the alertness of the Americans, their incalculable natural resources, their acuteness, their vast population," were making them "very formidable competitors." "The industries, trade, agriculture, railroads and finances of the Union," says the *Hamburger Fremdenblatt*, "have each and all climbed, one upon another, through and by each other, steadily upward. And to what a height have they climbed!" "Like

* Printed in the New York *Journal of Commerce*, June 24, 1901.

a storm," exclaims Dr. Alexander von Peez, in the *Allgemeine Zeitung* of Munich,* "is the forward movement of the United States." Thus, the best opinion in Great Britain, France and Germany, our chief industrial rivals, is substantially in accord in assigning us the foremost place.

A UNIQUE FORM OF EXPANSION

There is no parallel to our growth among modern nations for the reason that the only countries which approach us in territorial expansion—Great Britain and Russia—have extended their sovereignty under wholly different conditions. Both of those countries have pursued a career of conquest and absorption of alien peoples with wide differences of race, of language, of religion, of social instincts and habits. England's energies have been diffused all over the globe. Russia's efforts, though restricted to territory always contiguous to her advancing frontier, have been even less assimilative. In each instance, the absorption is largely artificial and dependent for its continuance upon the exercise of force. In the case of Russia, the force is almost wholly military; in that of England—as in India, the Malay peninsula, Egypt and elsewhere—it is a mixture of military restraint and efficiency of civil administration. With the exception of its recent insular acquisitions, the United States, in extending its boundaries, has taken up vast areas which could hardly be said to be populated. The nomadic Indians retreated swiftly beneath the submerging waves of our advancing civilization, and the remnants of French and Spanish occupancy were swallowed up with scarcely a ripple. As we moved forward, we fully occupied the land, and our development was continuous, well-ordered and thoroughly permeative. The result has been to create a nation with a clearly defined and substantially homogeneous individuality. To all intents and purposes, we are a unit in our distinctive Americanism, and it is this which gives us a large part of our power in the world.

WHAT THE GREATER AMERICA MAY MEAN

What does this Greater America of the twentieth century mean? To what does it tend? Is it a triumph for democracy, a final and indisputable vindication of the principles upon which the republic was founded, or does it represent, as some contend, a drift toward imperialistic ideas—the concentration of power in the hands of a privileged few and a career of conquest and aggrandizement, which will gradually corrode and finally destroy the individual liberties we have always held most dear? The answer to this question is to be found not in speculation as to what may or may not result, as indicated merely by departure from tradition. The "example of the fathers" is a safe rule to steer by only so long as we are sailing upon the waters they explored. Once launched upon seas unknown to them we must make a new chart, retaining their soundings of familiar depths and adding others from our own experience. The conditions we have to face are so widely different from those they dealt with that it were obviously absurd to assume that they would have acted otherwise than we are acting, or that the democracy they had in mind is necessarily hastening to its doom. On the contrary, a close analysis of the situation in which we find ourselves may reveal the fact that it is really a development of their conception of democracy, and the adaptation of it to far broader and more beneficent ends than even those of which they dreamed.

As to one thing, it seems to me, we cannot be in any doubt. Our rapid growth in industrial power has brought with it a vast increase of national influence and prestige, and a temptation such as we never felt before to play an important part in the world's affairs. One has not to look far to see that the success of our commercial invasion of the Old World implies our ultimate domination of the new. If Europe cannot check our progress within its own territory it cannot hope to overcome us in the still more unequal competition in the countries of the Western Hemisphere. And in the wake of industrial and trade enterprise will follow the characteristic influences which give a peculiar cast to our social and political development. The important question, not less for ourselves than for the countries upon which we shall encroach, is whether this domination shall take the form of absorption into our own political system or will content itself with the indirect upbuilding of them on American lines of development, but as separate political entities, with elements of stability and progress which they can hardly hope to evolve for themselves.

* Advance Sheets of United States Consular Reports, June 26, 1901.

INDUSTRIAL ABSORPTION PROBABLE

The Greater America of the future, if not of today, means assuredly this: That the United States will be the energizing, potential force of the Latin as well as of the Anglo-Saxon countries of this hemisphere. Whether joined to us by political ties or not, Canada no less than Mexico will feel more and more sensibly as time goes on her necessary dependence upon the Union in commerce, in industry, in all the sources of wealth, and consequently in the determination of the form which her social and political evolution must take. Both Canada and Mexico already give evidence of this result. The West Indies share in the same process of transformation to a lesser degree, and Central America begins to respond to the gradual inflow of American enterprise. The process is a purely mechanical one, and for that reason it is possible to make a fairly accurate forecast. We have to deal not with theoretical or sentimental conditions, but with concrete facts, or, in other words, the automatic, machine-like expansion of our industrial forces propelled by a national energy which seems irresistible.

POLITICAL INFLUENCE FOLLOWING TRADE EXPANSION

As our goods have swept over Europe, in spite of hostile tariffs, of national prejudices, of jealousy and alarm on the part of European manufacturers, so our enterprise and industry, when the times are ripe, will spread to the farthest confines of America. And wherever "Yankee" industry pitches, a swarm of "Yankee" ideas and impulses will be sure to settle. In time these will percolate through the most unyielding strata of race prejudices, and our interests will become so thoroughly commingled with those of our sister commonwealths that a substantial unification, over-riding differences of language, of race temperament and even of climatic conditions, may be found to have resulted.

AFFILIATION WITH SOUTH AMERICA

That such a condition, born of purely industrial forces, is neither fanciful nor very remote is made clear by the marked changes going on in the countries nearest to us as the result of increasing intercourse with the United States. For example, Mexico is a favorable field for the spread of our influence than Canada, because of more stubborn prejudices and race antipathies, yet Mexico is rapidly drawing closer to us. At the first glance it may seem that the contrary tendency exhibits itself in South America. We have made but little progress during the past decade in trade with that continent, and since our war with Spain there have been symptoms of reawakened prejudice and anxiety among some of the South American countries as to the ultimate intentions of the "Colossus of the North," which more than ever dwarfs their power. If even before our sudden rise to our present eminence we spoke to Europe with the voice of authority for the whole of America, and Europe hearkened, it is but natural that the South American republics should view with apprehension an increase of our ascendancy so great that we would have but to give free rein to the spirit of expansion to absorb them one by one with little risk of effective protest from any quarter. But, as has been shown in a previous article in THE WORLD'S WORK,* we are stationary in South America only because we choose to be so, and for the present are more profitably employed elsewhere. Whether we would ever wish to take over the South American countries as part of our political system is very doubtful, but it may be assumed that, if our present industrial expansion continues without serious check or disturbance, they will certainly become tributary to us in an economic sense, and will gradually be affiliated in their social and political institutions.

In other words, as the markets now more profitable are either curtailed to us or are fully occupied by our wares, South America will begin to offer strong inducements, and then for the first time we shall really exert ourselves to win its trade. By that time American capital will probably have embarked, as it now shows signs of doing, in ocean-carrying traffic, and the great desideratum of larger intercourse with South America, viz., direct steamship facilities fostered by liberal tariff agreements, will have been provided. As the successful competition of our goods with those now imported from Europe may be regarded as a foregone conclusion, commercial absorption is sure to follow, and commercial absorption means the gradual assimilation of the most alien of peoples to our

*August, 1901.

ideas, our habits, our standards of Americanism.

ANNEXATION OR A STRONGER AUTONOMY?

The precise nature of our future political relations with the other countries of America as they are developed by our industrial invasion of them, one after another, is necessarily a matter of wide speculation for the reason that no one can predict the course that national or race impulses are likely to take. As our people become intrenched in commerce and industry in a Latin-American country, it is but natural to suppose that they will exert a controlling influence in public affairs. Will their interest be found to lie in federation with the United States, or in molding the native elements capable of cooperating with them into stronger sovereignties not merely imitative of, but actually responsive to, our ideas of self-government, of public order, of healthful progress in manufactures, in commerce, in education—in a word—in all the lines that cross and recross each other so inextricably in the cunning fabric that makes us what we are?

In the consideration of this question—the question which, more than any other, is agitating the minds of Latin Americans in their discussion of the growing power of the United States—the experiment about to be made in Cuba becomes a matter of great importance. If the Cubans, aided by the immigration from the United States and restrained by the impact of our capital and industry, should prove themselves capable of maintaining political independence, to the benefit of all concerned, a working model will have been provided for other Latin-American communities as they fall, one by one, under our industrial control.

A GUARANTEE TO ALL LATIN AMERICA

Such a solution of our future relations with the rest of America would seem to be the easiest, the most economical, the most healthful for ourselves as well as for the countries which, as has been shown, seem fated to become, industrially and socially, dependencies of the United States at first, and ultimately, partners in its prosperity and power. It would relieve them of all apprehension of territorial acquisition; it would safeguard us against the intrusion into our political system of influences alien to our institutions which might and probably would have a baneful effect upon our domestic affairs. In view of these considerations, may we not conclude that it is the part of sound economy, as well as wise statesmanship, to do everything in our power to make Cuba self-supporting, free and stable? She would thus become a guarantee to all Latin-America of the moderation of our views and an object lesson of the material benefits accruing from the closest association with our industrial forces, our rapidly augmenting money power. No Latin-American country would fear us longer if the conviction spread that we were much more deeply interested in making it strong and prosperous and, therefore, a profitable customer and an inviting field for our capital and enterprise, than in aggrandizing ourselves politically.

HOMOGENEITY OF OUR PEOPLE THE SOURCE OF OUR STRENGTH

Undoubtedly, there is much to be said in favor of preserving the homogeneity of our people. If we have prospered so amazingly, it is because we have proceeded systematically on the lines laid down by the founders of the republic for a chain of colonies peopled by a single race, with substantially the same political and social instincts, the same standards of conduct and of morals, the same industrial capabilities. Wave after wave of European immigration—made up of elements the most diverse and often the most antagonistic—has broken upon the rock of American character with no other effect than to be lost in the general current of our development. Had these elements not been swept from their moorings at home and forced to mingle with our native population, they might have preserved their traditional instincts and have exercised a strongly modifying influence in shaping our national growth and evolving an American type very different from that which has given us such prominence in the eyes of the world. In other words, had we annexed these peoples *en masse*, without dislocating them from their native environment, we would have enabled them to preserve the solidarity of their racial traits and might not have found it easy to absorb them. Wherever they have gone, they have been exposed to contact with purely American ideas, customs, impulses, and the most stubborn of them have yielded gradually to the constant attrition.

It is doubtful whether we shall so readily

convert the populations of our dependencies —Porto Rico, Hawaii, the Philippines. Their racial instincts are probably not more stubborn than those of the Italians, the Poles, the Russian Jews whom we have Americanized, but they are detached from us and incapable of being merged into the great mass of our population.

DANGER OF ACQUIRING MORE TERRITORY

It follows that Canada and Mexico are the only regions to which we could look for such extension of our boundaries, and both of those countries are growing so rapidly in the elements of a healthful national development and independence that it will probably be found to be unprofitable to disturb them. As a matter of fact, have we any sound interest in seeking more territory? Is it not true that the greatest strain our democratic institutions have had to bear—a strain that culminated finally in the terrible convulsion of civil war —has sprung from the vast extent of our domain, dividing, by reason of mere distances as well as climatic conditions, into large sections of country with different interests and different economic and social conditions? It is only because of that racial homogeneity which has been described that the breach has been healed, and the Union today is stronger, more durable than ever before. It is the Northerner at work in the South with his ingenuity and his money; the Southerner at work in the North as well as at home, with his new spirit of enterprise and practical adaptability, who reconcile the two sections to each other. It is New England enterprise spread all over the West that has harmonized that region with the interests of the East.

All portions of the country are now welded together by the interplay of forces of industry and trade which generate a community of interest and feeling stronger than any local influence of a centrifugal kind. But with the dire experience of the past to enlighten us, would we be wise in adding new centrifugal influences, or in other words, annexing more territory as part of the Union and therefore having a voice in our domestic affairs, which, with interests divergent from ours, might easily become a hot-bed of dissension and strife? Solidified though we be at present, we have not wholly passed beyond the danger point of sectional jealousies. Politi
economic changes are ea b

might again array one part of the country against another. It is not impossible that statesmanship may some day find its hands full in adjusting fresh causes of difference, and at all events, our labor will not be thrown away in conserving with jealous care the influences that make for a closer Union, a more widely diffused Americanism, a stauncher national life.

NO IMMINENT RISK OF OVERCROWDING

We have, excluding insular possessions and including Alaska, an area of over 3,600,000 square miles, about equal to that of the whole of continental Europe. Our population, spread over this vast territory, aggregates 76,000,000. That of Europe is about 320,000,000. At our diminishing rate of progress* and leaving out of consideration the probable decline of immigration as the Union becomes more thickly settled, and new countries are opened up, offering superior inducements, it may be a century or more before we reach two-thirds of Europe's total. It is to be noted, moreover, that we have less waste land than has Europe, and that there are no political and race barriers which, on that continent, prevent the spread of one nation into the more sparsely settled territories of another.

The truth is, our people, as yet, are merely skimming the cream of their productive capacity, and there is still an immense field of agricultural development, with intensive cultivation and the more general use of labor-saving implements and machinery, even in the older, more thickly populated communities. Take the State of Maryland, for example. It was settled in 1634 and has been under comparatively close cultivation for nearly two hundred years. Yet colonies of Dutchmen and Swiss have, in recent years, settled on lands that the average Marylander has always regarded as either worthless or of but little value, and are making them blossom like the rose. So of irrigation on the arid plains of the West. Lands that were desert a decade ago are now luxuriant with vegetation. Europe has a density of population of nearly 100 to the square mile; ours is but 25.6, and it has not quite doubled in forty years. Who can doubt that we still have plenty to do be-

* The percentage of increase in population dropped n 30.1 per cent. in 1880 to 24.9 per cent. in 1890 and er cent. in 1900.

fore we shall have developed our soil to its full capacity of comfortable support for the increase of population?

CONDITIONS THAT ENCOURAGE INDUSTRIAL EXPANSION

But long before there is any real overcrowding, there will be restlessness on the part of the speculative and adventurous among our people, and an eager quest for golden opportunities wherever they are likely to be found. The steady influx of Americans into Mexico, Central America, South Africa, shows that this movement is going on even now. The instinct is in our blood. In every American community, however conservative, there are always individuals who are unable to content themselves with the humdrum of the daily routine or the moderate profits to be earned. They are by nature speculative, daring, venturesome. The risk involved in enterprises in a distant region which seems to offer a dazzling prize, attracts instead of repelling them. They are born pioneers. From the birth of our nation, it is this class that has steadily advanced our outposts and blazed the way for general immigration and the gradual upbuilding of industry and trade.

As our population grows and the pressure of competition becomes more onerous for every individual, it is to be expected that this national spirit of impatience with contracting opportunities for acquiring wealth and distinction will become more and more pronounced. It is more than probable that the overflow of enterprise and industry from the United States into other parts of the Western hemisphere will swell with increasing rapidity every year, and this tendency is likely to be greatly accelerated by the progress of industrial combination which inevitably circumscribes individualism, and therefore increases the number of those who find it difficult at home to rise above the common level. In an undeveloped country only can they hope to emancipate themselves and carve out a competence or perhaps a fortune of their own.

THE MOVEMENT SOUTHWARD

The drift of industrial and capitalistic outflow from the United States, as has been intimated, shows that this movement will be to the southward. At each step of its progress, we may assume, it will safeguard itself by laying its impress broad and deep upon the vital interests of the people and weaving about them a net of distinctively American influences it will be difficult to break through. The settlers from the United States in any of the Southern countries, so soon as they are strong enough, will inevitably take an active part in the Government; they will help to make its laws; to regulate its foreign relations, and as they become more and more firmly intrenched as the authors and guardians of its peace and prosperity, there will be less and less danger of complications with the United States and a more and more general acquiescence in our leadership. What possible need could we have for the mere form of suzerainty, with all the perplexities and perils which would inevitably accompany it, when once our people had won, by peaceful and ordinary means, the substance of power?

A PRACTICAL GOAL FOR PAN-AMERICANISM

If our future relations with the Latin-American countries, following the law of what may be termed the mechanical probabilities of the case, shall take this salutary course the sentimental idea of pan-Americanism will be no longer a dream, but an accomplished fact, and the Greater America will be at once the largest contributor to and the most powerful guardian of the peace of the world. It will be imperialistic in appearance but democratic in fact. It will wield enormous forces and be a dominant figure in the world, but applying the general principle of home rule, of popular self-government that has preserved the individuality and stimulated the development of our States while merging them into a more perfect Union. It will secure to all the parts of a vast international fabric the same free play of expansive forces that has made us so strong and great.

Is not this a consummation, following our own historic process of development, devoutly to be wished? If we are to expand, as seems inevitable, is not this the form of expansion most nearly in harmony with our institutions? If we are to be the permanent spokesman to the world for the whole of America, would it not be best for us, as well as for our constituents, that we should act with the ready and cordial assent of all its parts? Such willing concurrence can never be obtained by the forcible imposition of our will. It can come only from the gradual blending of the material interests of every community with our own.

A MILL TOWN IN STRIKE TIME

McKEESPORT, PA., UNDER THE EXCITEMENT OF THE STEEL STRIKE — THE INSTRUCTIVE HISTORY OF THE WOOD MILL: BEFORE UNIONS AND TRUSTS AND UNDER A TRUST AND A UNION — NEW WEAPONS IN LABOR WARFARE

BY

M. G. CUNNIFF

THIS is a study of McKeesport, Pa., and of some of the phases of the strike of the steel-workers. The writer went there and talked with all sorts of men, because in the early months of the strike the most instructive events happened there; and the Dewees Wood sheet steel mill there has a history that is full of instruction in a strike-time. Here men were managed for nearly half a century with wonderfully good results —by human touch. The human touch had been removed hardly a year when trouble began. The story is suggestive alike to corporation builders, to workmen and to students of the ways of men.

McKeesport was self-consciously idle. Uncomfortable groups of men loafed about the railroad station, talking with much waving of the hands: Shaffer had said this or that. Up and down Fifth avenue sauntered aimless strikers. In a second floor window overlooking the crowd was a man smoking a cigar. His crossed feet rested on the window sill; before him on a desk was a heap of bitter newspaper clippings. The sign on the window was "Doctor Black":—the man, mayor, by the grace of one vote, of the city of McKeesport. On the river, in skiffs, and scattered around the vast stretch of sleeping mills the pickets of the strikers watched for "scabs."

Down at the foot of Walnut street rang the sound of hammers. A steam-crane was at work, and a switch-engine was shunting carloads of steel-billets and mill machinery. President McMurtry of the American Sheet Steel Company had checked the strikers by ordering the dismantling of the W. Dewees Wood sheet steel mill, the oldest factory in the city; and a gang of laborers were demolishing it. The strikers said that the order to dismantle it was a "bluff;" in the main the townspeople also held this view; but, at all events, there was work then going on inside the mill. About the city, moreover, ran a disquieting rumor that the reported utterances of the mayor and the strike of the tube-workers, one of whom when asked as they struck, why they were coming out, replied: "Aw, we dunno; we're just strikin'," had provoked the Steel Corporation to move also the mile-long Tube Works. That, too, it was said, would depart, leaving McKeesport as dead as Babylon.

Here was a new situation; the city, a prosperous and growing community of 35,000 inhabitants, but absolutely dependent on its mills, was facing the threat of utter industrial extinction.

The situation becomes more dramatic when the history of the town is recalled. The kernel of the tale is the history of the Wood mill. The story of that establishment throws a brilliant light on the growth and power, and the workings, of trusts and labor unions.

In 1856 W. Dewees Wood came from his father's sheet-iron mill at Conshohocken, Pennsylvania, to the Monongahela Valley to build a factory. He knew a secret process for making planished iron, the shiny non-corrosive material that is used as the outside covering for locomotive boilers because polished metal holds heat better than rough. Though it had been supposed that the method of making it was known only in Russia, so that it is still called Russia iron, Dewees Wood had the secret; and when he searched the valley for a suitable location for a Russia iron mill, he selected a spot just below the junction of the Youghiogheny and the Monongahela in the little village of McKeesport. There in 1856 the corner-stone of the new mill was laid. The establishment consisted at first of a single pair of sheet rolls. But,

as the business waxed year by year, the mill spread out on both sides of Walnut street; the force of workmen increased; through the development of the mill the village of McKeesport grew as the mill grew; and the workmen became known as highly skilled laborers and good citizens of the town, and Dewees Wood as an ideal employer.

"Every man in the works," said a striker to me in McKeesport, "was 'Tom,' or 'Joe,' or 'Bill,' to him; every day he would walk about and joke with the workers at the furnaces and rolls; and, if a man looked ill, he would slap him on the back and tell him to take a few days off. He didn't take the vacation out of the man's time, either." When a man had been killed in the mill—and the list of cuts and burns and broken backs along the Monongahela is appalling—the widow and the children regularly received the dead man's pay-envelope until they were able to take care of themselves. The enthusiastic reverence that the people of McKeesport, from bank presidents to the most hot-headed of strikers, pay the memory of W. Dewees Wood, implies that his methods were successful. On his return from a journey he always made a round of the mills, shaking hands with every "Tom" and "Joe" and "Bill" in the whole plant, like a man coming back to his family. Once, too, it is said, he was offered a chance to buy real estate to sell to his workmen—and the men working for him were of the kind that begin early to acquire homes—but his reported reply was, "No, I will not take back from the men the money I paid them in wages." The growing city needed a library; the largest contributor was W. Dewees Wood. Nor did the men in the mill fail to respond. When, according to his habit, Mr. Wood advanced money to a man to tide him over a long illness—a man injured in the mill was supported outright—although the debt was never mentioned, every man gradually paid what he owed to the last dollar.

With these hearty relations between employer and employee, the mill grew until it covered fourteen acres and employed in rush times 1,200 men, though the usual force was about 900; and Mr. Wood was able to make his favorite boast that every locomotive in the country wore a jacket of McKeesport steel. Around the works had grown up a flourishing town, and when twenty-five years ago capitalists from Boston built the Tube Works, that now extend from the Wood plant to Demmler at the outskirts of McKeesport, the town grew into a city. In that city the best known and best-liked man was W. Dewees Wood. In that city, too, which has prided itself on having more home-owning workmen than any other city of its size in the country, the employees of the Wood mill, the greater number of whom own their homes, were regarded as the highest type of skilled steel workers.

All this time there was no union at the W. Dewees Wood mill, nor was there any great corporation controlled by non-residents. "I shall run my own mill in my own way," Mr. Wood was fond of saying; "if not, I shall not run it at all." Whenever the men in the works had a grievance, an impromptu committee visited Mr. Wood, and the matter was discussed. Sometimes it was decided one way, sometimes the other, but always by Mr. Wood, and never so as to arouse resentment. Said one of the strikers, "He was always fair." So firm was he, however, in maintaining his right to peremptory decision that a common remark during the strike was, "If Dewees Wood had lived the mill would not now be threatened; he would never have gone into the trust." At all events, while he lived he was executive officer of his own business. When he died, some half dozen years ago, the mill was closed, and every employee went to Pittsburg to the funeral, the older men in carriages sent by the family. How clearly he is remembered, any visitor to McKeesport may discover by asking the first passer-by what sort of man was W. Dewees Wood.

After his death the mill passed to his three sons, who, according to current talk in McKeesport, closely resemble their father. Mr. R. G. Wood, one of the sons, took charge of the mill. Business had fallen off a little, but the mill was still coating American locomotives with planished iron, still ran non-union; and Mr. Wood coöperated with his employees after the manner of his father.

But a little over two years ago appeared in McKeesport the American Sheet Steel Company, which in consolidating sheet steel plants took in the W. Dewees Wood mill, giving, it is said, $2,000,000 worth of mortgage bonds on the plant to the Wood brothers and making Mr. R. G. Wood manager. The people of McKeesport say that he was unwilling to

sell "But," remarked a well-known citizen, "what could Dick Wood do? He was trying to get new machinery at Philadelphia, billet steel for his rolls, cheap railroad rates—and he found the trust in his path. Said he to me when the transfer was made 'I don't want to go into the trust; I have to. If I hold out I can't get supplies for my mill; I must go in.'"

Almost at once it became a matter of common report that the mill was going to leave McKeesport. To mass all the sheet steel mills at some one town—Vandergrift was named—the Sheet Steel Company, it was said, would tear down the Wood plant. This is important, for when President McMurtry's dismantling order was issued in August, and reports were rife that the departure of the Wood mill alone would mean the ruin of the city, it was recalled in McKeesport that the first announcement of the company's project was of so little importance to the outer world that it had not been regarded as news beyond the Monongahela Valley. The strike magnified its sensational value.

As reasons for moving the mill it was urged that it was old and out of date; that it was cramped for room; that the point in the river made by the slag dumps upon which the Duquesne mills were built dammed the river in the spring until it flooded the boiler house; that the Tube Works wanted the land. Such a removal, however, was simply a business undertaking, to be reckoned with as such; workmen who had built houses in McKeesport were free agents—they could sell and follow, or sever connections with the mill and remain. There was regret but no bitter feeling.

Each year, however, the men had to sign contracts to remain non-union—and here enters a consideration bearing on an important question of the early days of the strike. Regarding the breaking of contracts by the Amalgamated Association itself nothing need be said. But it was often hotly declared that the Amalgamated Association had called on non-union men to break individual contracts with employers. Said a Wood mill striker with equal heat: "If an official comes through a mill, seeing the workmen one at a time, and asking each man to sign a contract, with the implied threat that the man will be discharged if he does not, the act is so near coercion that the contract, signed unwillingly, should not bind him. Even if all contracts began and expired at the same time, they might expect us to keep them; but when the contracts are so arranged that some expire at one time and some at another, so that under the system at no time could all contract non-union men be free to organize, such a shrewd plan on the part of the manufacturers must be met by drastic measures on the part of the Association, much as we hate to resort to them." At the Wood mill, therefore, under the Sheet Steel Company, there were demands for contracts on the one side and silent organizing on the other, until in April of this year ten men were discharged for organizing. Mr. R. G. Wood, after begging the men not to organize, had resigned his position as manager, rather than fight his father's old employees. Upon the discharge of the ten men for joining the Amalgamated Association, this supposed non-union mill struck in a body. The trouble was temporarily adjusted; but the Amalgamated Association was tightening its ranks for a fight, and during the two weeks' shutdown of the mill in July for repairs the strike was called. A member of the Amalgamated Association, with how much exaggeration it is impossible to say, asserted that all but six of the Wood mill employees were members of the association; and George Holloway, boss heater in the mill, was president of Enterprise Lodge of McKeesport. In brief a business establishment that, as James Evans, President of the Bank of McKeesport and the most eminent citizen of the town, remarked, "helped give the city a world-wide reputation, made high grade specialties, furnished steady employment at the highest wages, and employed the best class of workmen in the city, prosperous citizens who owned their own homes," was forced into a trust; a union was quickly organized in the mill, affiliated with the unions of other mills and pledged to uphold them even in questions not directly concerning the mill itself; and the result was, first, a strike and then an order from an official of the trust to remove this institution of which the city was proud, and which had been the basis of its prosperity, with the assertion from another official of the trust that the removal was due not to ordinary business reasons but to a new feature in the problem—the acts and words of the Mayor and the citizens of McKeesport. Thus came quickly the dramatic change from the methods and the personality of the elder Wood to the complex situation—from ion rom private ownership

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As for the business men of the town, bankers, merchants, real estate men and the rest, they did not support the mayor. Privately they severely censured him, not so much for what he did as for his loose talk.

Now as far as the Wood mill is concerned its removal was contemplated as soon as the Sheet Steel Company had bought the plant.

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lished for the Swedish population, a conservative element, who after striking refused to join the Amalgamated Association. Two trolley lines make an hour's run to Pittsburg, and the city is accessible by three railroads and a packet line on the river. It is a representative community of considerable importance, and it does not deserve a premature visit from Macaulay's New-Zealander.

When this article is finished the steel strike is still unsettled; and the future of McKeesport is undetermined, so far as the public knows. But the dramatic instance that the town affords of the far-reaching and complex social violence that an ill-managed and unnecessary labor-war may cause is as clear as it can ever become; and here is the contrast between working life under the former non-union, non-corporation conditions and the conditions which now exist with ambitious labor unions and great corporations. From it every man may draw his own conclusions according to his prejudices and his wisdom.

IN STREET OF McKEESPORT
Fifth Avenue in strike time

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JEROME AND CIVIC HONESTY

THE PERSONALITY OF JUDGE JEROME OF NEW YORK AND HIS AGGRESSIVE METHODS TO OBTAIN DECENT PUBLIC SERVICE

BY

ARTHUR GOODRICH

THE echoes of New York's busy Broadway and the untidiness of the unwashed lower East Side seem to mingle to form the dirty, noisy gamin who plays about the steps of the Criminal Courts Building. On a door within are the names of the five judges of the Court of Special Sessions, but the policeman in the corridor says, with a jerk of his thumb:

"Jerome's."

And the policeman is right. Back of that door is a business office rather than judges' chambers. The atmosphere is not that of formal judicial dignity. It is vivified with tense, nervous action—the action that breaks over worn-out traditions and precedents, and makes new ones to meet the necessities of changed conditions, action that is trying to undermine the closely welded together political depravity of New York. The man with the cigarette, now at the desk, now by the shelves, now in an adjoining room, cool and restless at once, never excited, always excited, who looks like a business man and talks like a business man, incisively and rapidly, with a quick sense of humor, which can turn grim in an instant, fills the place utterly. Jerome is an automatic force that originates like an inventor, weighs a decision like a judge and, the thing once settled, acts with the precision and tirelessness of a man of business. And he enjoys the action most of all.

All New York knew the father, Lawrence Jerome, and liked him. He made money rapidly in the Street and spent it freely. He and his brother Leonard married sisters. One of Leonard's daughters became Lady Randolph Churchill. Lawrence Jerome's youngest son was named for his friend, William Travers. The boy was not strong, and instead of taking the usual courses in school he was put in the hands of tutors. The last of the list was a clergyman, and when the young fellow, after a short course at Williston Seminary, entered Amherst College in the class of 1882 he was very much of a straight-laced, blue-lawed Puritan. He took himself very seriously and was an endless worker. He developed a passion for mathematics in his freshman year that brought him the 94+, which indicated the highest possible excellence. He was not satisfied until he knew all there was to know about each knotty algebraic problem. When there seemed nothing more to learn he tried chemistry. He went into an elementary class in that study, attended a few lectures and suddenly stopped altogether. After two or three weeks the professor in charge, noticing his continued absence, called him to his office.

"Mr. Jerome," he said severely, "you have not been attending my lectures regularly."

"No, sir. I didn't think it was of any use to me," was the frank answer.

"What do you mean?"

"I mean that I am ready to be questioned on any of the work that has been done."

And after quizzing him closely for some time the professor was unable to find a question that Jerome could not answer. He was already mechanically thorough. He became an assistant in chemistry, but his poor health, that held him indoors and which, because he must be doing something constantly, kept him at work, forced him to leave college during his junior year. He took a trip to Mexico, and on coming back entered Columbia Law School, from which, though handicapped by physical weakness, he graduated in 1884. He was admitted to the bar in the same year after passing a brilliant examination, although until he received his report, he thought he had failed utterly. He toiled through the usual apprentice period in an office, and finally opened his own practice in partnership with an old college chum,

Daniel Nason. He became interested in criminal law, and not only studied the code as it stood but worked at the scholarship of it, tracing its growth through history until he knew the origin and development of its every phase. Something brought the law of contracts particularly to his attention and, for a year, he gave every free moment to study over practical examples of its workings. Meanwhile the office's business grew.

Lawrence Jerome was a Democrat and had influence with Croker. As a result District Attorney Fellows appointed young Jerome one of his deputy assistants. And it was in the District Attorney's office that his closely drawn rules of conduct began to broaden and make themselves solid. He gradually saw the entire framework of a vile system of political corruption. Papers of importance would disappear and justice be forgotten at the will of the political leader. The Assistant District Attorney studied it all as he had his chemistry or his law, and often papers reappeared and justice was necessarily remembered because of his vigilance. Back to his own practice again, he became associate counsel for the defence of Carlyle Harris. He knew that the prosecution's chemist was to testify of the finding of the chemical components of opium. He set to work and after six months' steady preparation he met the testimony with a proof that other substances could have produced exactly the same components. He astonished the prosecution with his knowledge of the science. And although he broke down in the midst of the trial, a night's rest put him to rights again, and he saw the defence to its unsuccessful finish.

When the Lexow investigation followed Dr. Parkhurst's agitation for reform, Jerome became an associate counsel to Mr. Goff for the prosecution. And when, later, the Committee of Seventy was organized to lead the fight for purer city government, he, a member of the committee, was made the manager of its campaign. Here, as usual, he was thorough. The reform ticket was successful and Mayor Strong appointed him Judge of Special Sessions for eight years. His friends thought that he was foolish to accept the place, but Jerome's mind was already beginning to work away at possible new activities. And from the powers which this position gave him he has paved a way for a most practical and permanent method of making a municipal government keep itself clean, a method which, with the aid of an aggressive, right-minded District Attorney can, he has begun to prove, stamp out any such wholesale system of police blackmail as exists in New York, Chicago and Philadelphia.

Jerome was talking one day with a friend, and casually remarked that he was going to buy another bicycle.

"All right," was the reply. "But I warn you now. You won't quit until you have tried every wheel in the market. You won't stop until you know the whole bicycle business."

And that is precisely what happened, for that is the ground-work of the man. Once started at a thing he learns it from top to bottom, from east to west, the entire latitude and longitude of it. It was so with his studies at college and in the law. It has been so with any number of the lesser activities with which he has filled his vacant hours, and it was so in his definition of the duties of a magistrate. He learned its entire three dimensions, and then discovered a fourth.

In the past judges have been satisfied with merely judging, weighing whatever evidence came before them. But they have another function, another duty. Jerome saw this clearly as he prepared himself for his work on the bench. A Grand Jury must, first of all, inquire into the commission of crimes; it may cause witnesses to be brought before it whom the District Attorney, its legal advisor, has not seen fit to introduce; it may institute inquiries of which the District Attorney may be entirely ignorant. After this inquisitorial function is completed it weighs the evidence. All this, also, is within the powers of a magistrate. He can do more than judge; he can first pursue an inquiry and obtain additional evidence. As the thought developed in Jerome's mind he saw the many advantages that an inquiry conducted by a magistrate would have over one carried on by a Grand Jury. It is hard to find a Grand Jury on which there are not men whose personal connections make the keeping of secrets impossible. The newspapers and the very people against whom the inquiry is directed are informed almost immediately. The ordinary routine criminal business is apt to be so great that a Grand Jury has no time left for a patient, consistent investigation of the city's official dishonor. Such

an investigation must last much longer than a month—which is practically the length of life of a Grand Jury—and must be carried on at all hours of day and night, in all sorts of places and under all sorts of conditions. More than this, a Grand Jury is made up of busy men who begrudge even the ordinary three or four hours' service a day, while any searching investigation may at times be prolonged for eight or ten consecutive hours. All these conditions blocked the Grand Jury from being the means of exposing baldly the intricate corruption which the general public indefinitely knew to exist. He worked it all over carefully again and again. The city departments were rotten to the core; "grafters" were at their trade openly; a political organization untied the purse-strings of the public treasury at will; crime went unpunished; and the police force was being paid by the city to do its duty and by criminals not to do it. The most practical way to meet such organized dishonesty was with the criminal law. The Grand Jury could not do it. The magistrate could. But to be absolutely successful he must have a District Attorney who was as dead in earnest as he was, a man who would lay before him the information by which he would be enabled to issue his subpœnas and administer an oath to anyone connected with the complaint. So he developed his plan and waited. It absorbed him utterly. He talked of it with a few colleagues whom he could trust and won them, against their will, to his side, and when Governor Roosevelt appointed Mr. Philbin as District Attorney, he went to work. The results have been in the papers daily ever since. In a few months over one hundred and thirty persons have been arrested for felony on his warrants, and not a single case that has been brought to trial has failed of conviction. With the aid of the Committee of Fifteen, he has, for the time being at least, either closed the gambling houses or stopped their profits. Many disorderly houses that have been an insult to public decency have closed their doors, and he is fast getting at the powers that control the trust in souls that operates in the police department.

He has done this work because he is a good citizen. Once, some years ago, he was asked to prosecute a number of related cases. The fee promised was $10,000. There would have been double that amount in the work. He considered it carefully before deciding.

"No," he said at last. "I can't take it, for I don't believe we could get any results."

And it is cold, definite results that he has been after in this investigation. Perhaps he likes the fight of it, but the achievement of his purpose was what he wanted most. He reminds one of Stevenson's American tramp who chopped because "he liked to see the chips fly." And he has been successful here as elsewhere because he knew, from long experience in criminal law in New York, the deep-rooted diseases from which the city was suffering, and by careful study and thought prepared himself for the struggle against them. He has had little sympathy. Many of his colleagues would rejoice in his failure. He has had against him one of the mightiest organizations of civic depravity in the world, and behind him an apathetic, critical public—for the composite public mind is always doubtful of a man who offends its conventions.

It has been said that it is not dignified for a judge to raid a gambling den, to break down doors, to hold court over the gaming-table. But Jerome cares less about his own personal dignity than about the city's dignity. "Your honor" does not mean as much to him as civic honor. How best could he accomplish results? How most quickly could he bring the criminal to justice? His attendance on a raid had this advantage. The patrons of the house, who could not be arrested or forced otherwise to give their names and addresses, could be sworn immediately, their names and addresses recorded and, later, their testimony obtained, which, of course, is more valuable than that of any man who must admit on the stand that he was paid to get evidence. His personal supervision, moreover, made it less likely that the place against which the raid was planned would be "tipped off" by the police. His going meant more adequate results, and he went. Whenever he felt that as much could be gained without him as with him he stayed at home, although he has that boyish love of excitement that would undoubtedly have made him enjoy participating in every raid. His work has been criticised also as being mere ante-election agitation. Nothing is farther from Jerome's wish. He is not a petty politician who covers wrangling personal ambition with a presumption to "independence" and "reform." He believes that whether the administration is supposedly

decent or assuredly indecent, Reform or Tammany, it will bear watching. He thinks that there should be a permanent Vigilance Committee doing the work which the Committee of Fifteen has undertaken. And if a District Attorney is elected who will support him it is undoubtedly his purpose to continue exercising his inquisitorial powers as a magistrate. Indeed, so great is his faith in the use of these powers by magistrates that he says frankly:

"I feel that any man who is District Attorney, and who obeys his oath in letter and spirit, can by persistent effort continued for a year or two absolutely wreck and bring to justice the men who are responsible for the condition of affairs existing; and he can accomplish it best by invoking the inquisitorial powers of the magistrates."

Jerome is a Puritan, pretty thoroughly civilized. He has ceased to take himself too seriously and is engrossed in concerns that are much more important than any man. Contact with men and with the lower side of city life have made him flexible, while he retains his solid principles. He is a long way removed from the caricaturist's depiction of the reformer; a thorough, genial good fellow with clean-cut broad views of things. He believes rigidly in law and its enforcement. He has great disrespect for a law that must, on the face of it, be broken, a law which means adding perjury to the crime. And such laws all come back to the people. The public makes laws against disorderly houses; yet it supports many hundreds of them in New York City alone. It closes saloons on Sunday, and then steals in at the side-door and drinks. It appoints policemen to see that the laws are obeyed, and tells them frankly that it will break these laws. And the police go a step farther, and use the laws that are sure to be violated as a means of personal revenue. This being the case Jerome is utterly opposed to any law which is so drastic as to encourage the frequent breaking of it by all classes of people. The criminal courts cannot deal adequately with the disorderly-house matter (except, of course, in so far as such places are a public nuisance) until the mass of the people decide they do not wish disorderly houses. He believes that better results are to be obtained in New York by the present high license for saloons and keeping them open at all hours, except during church time and on election days, than by encouraging a wholesale breaking of the laws by closing them on Sunday.

"A man does not order his desire for liquor by the hands of a clock," he said not long ago. "It does not cease at twelve o'clock Saturday night and begin at six Monday morning. So he breaks the law and makes another man break the law on Sunday."

But he believes that there is no strong public sentiment favoring open gambling dens, and that these, with the many crimes they breed, can be entirely suppressed.

He is as honest as Theodore Roosevelt; as frank as sunlight. Indeed, some of his friends think that he carries his strict probity to too great an extreme. In his early practice he was appointed one day referee in a foreclosure case. The common fee for such service was $75. After he had completed his task, with characteristic exactness he decided to find out how much was due him according to the law. He looked the matter up and discovered that the amount was something less than the customary fee. And when the money came in payment he refused to accept more than the sum which the law required. And his sense of right is even more delicate than this. He was chosen once to take a very important and lucrative case at a considerable distance from New York, a case that required knowledge of the locality in which it was tried.

"It's out of the question," he said. "I couldn't do it justice."

He doesn't care for opera because it offends his sense of reality.

Once settled upon a line of action he is absolutely hard-headed about it. No amount of advice or threats can swerve him from his purpose. And this does not affect him disastrously only because he usually knows his ground thoroughly before he decides. While he is making up his mind he courts counsel. And he is as democratic at his work as he is indefatigable.

"We have never had to consider Jerome's convenience," said a member of the Committee of Fifteen of him. "We can call him up on the telephone and tell him to be at a certain place and he is there. He has the same freedom with us."

His lofty ideal of the sacredness of the law and h· ·nal honesty make him intention- ·ll· h all his active hate of the cor-

ruption he is unearthing he has been fair in his work of the past months. When he was Assistant District Attorney a man was brought to trial for a serious offense. The prisoner had no money and could not pay for counsel. He maintained stoutly, however, that he had been elsewhere when the crime was committed, but he had no witnesses to prove his alibi. The thing was simple and the man was convicted. Jerome conducted the prosecution. Many prosecutors work for a conviction at any cost. But Jerome made up his mind that, possibly, there was truth in the fellow's story. At the expense of his own time and money he investigated it thoroughly, found competent witnesses to prove the prisoner's word, and the man was discharged. And he has given his services on many another occasion to people who needed help and could not pay for it.

Jerome is a man of many hobbies. If a trivial thing, as well as if a some serious purpose, takes root in his mind, it grows until, for the time being, it is a part of him. His bicycle fad is only one of many. For a while it was photography; again it was chess; later it has been golf and steam-carriages. And all these things have helped him to a more vigorous health than, in his early condition, he could have hoped for. Self-playing pianos interested him and he bought a small Aeolian. From that it was a slow progression until, a little time ago, he had one built for him at a heavy cost. He will spend a whole evening playing himself into a mood for the next day's work. At Lakeville, Conn., he has built a little machine-shop. It was only a few weeks since that his wife called to him at midnight, and wanted to know if he intended to work the machines all night.

Jerome is not a politician. He is too frank, too outspoken. He lacks the subtlety. Nor is he on the hunt for an office. Perhaps he will be District Attorney. Perhaps he will return to private practice. Perhaps he will give the legal profession the benefit of his scholarship in criminal law by writing books. Certainly he has helped to blaze a way toward cleaner city government. Certainly he has shown himself to be an earnest and tireless ally of the law and a just, straight forward gentleman.

"If I could be bought," said a friend of his a week or so ago, "and you offered me a bonus to tell you something against Judge Jerome, I couldn't do it, even if I wanted to—and that after knowing him closely for twenty-five years."

THE TRUE REWARD OF THE NOVELIST

BY

FRANK NORRIS

AUTHOR OF "THE OCTOPUS" ETC., ETC.

NOT that one quarrels with the historical novel as such; not that one does not enjoy good fiction wherever found, and in whatever class. It is the method of attack of the latter-day copyists that one deplores—their attitude, the willingness of so very, very many of them to take off the hat to Fashion, and then hold the same hat for Fashion to drop pennies in.

Ah, but the man must be above the work or the work is worthless, and the man better off at some other work than that of producing fiction. The eye never once should wander to the gallery, but be always and with single purpose turned *inward* upon the work, testing it and retesting it that it rings true.

A SCHOOL OF COPYISTS

What one quarrels with is the perversion of a profession, the detestable trading upon another man's success. No one can find fault with those few good historical novels that started the fad. There was good workmanship in these, and honesty. But the copyists, the fakirs—they are not novelists at all, though they write novels that sell by the

hundreds of thousands. They are business men. They find out—no, they allow *someone else* to find out—what the public wants, and they give it to the public cheap, and advertise it as a new soap is advertised. Well, they make money; and, if that is their aim—if they are content to prostitute the good name of American literature for a sliding scale of royalties—let's have done with them. They have their reward. But the lamentable result will be that these copyists will in the end so prejudice the people against an admirable school of fiction—the school of Scott—that for years to come the tale of historic times will be discredited and many a great story remain unwritten, and many a man of actual worth and real power hold back in the ranks for very shame of treading where so many fools have rushed in.

For the one idea of the fakir—the copyist—and of the public which for the moment listens to him, is Clothes, Clothes, Clothes, first, last and always Clothes. Not Clothes only in the sense of doublet and gown, but Clothes of speech, Clothes of manners, Clothes of customs. Hear them expatiate over the fashion of wearing a cuff, over a trick of speech, over the architecture of a house, the archæology of armor and the like. It is all well enough in its way, but so easily dispensed with if there be flesh and blood underneath. Veronese put the people of his "Marriage at Cana" into the clothes of his contemporaries. Is the picture any less a masterpiece?

PRECISE AND UNTRUE

Do these Little People know that Scott's archæology was about one thousand years "out" in Ivanhoe, and that to make a parallel we must conceive of a writer describing Richelieu—say—in small clothes and a top hat? But is it not *Richelieu* we want, and *Ivanhoe*, not their clothes, their armor? And in spite of his errors Scott gave us a real Ivanhoe. He got beneath the clothes of an epoch and got the heart of it, and the spirit of it (different essentially and vitally from ours or from every other, the spirit of feudalism); and he put forth a masterpiece.

The Little People so very precise in the matter of buttons and "bacinets" do not so. Take the clothes from the people of their Romances and one finds only wooden manikins. Take the clothes from the epoch of which they pretend to treat and what is there beneath? It is only the familiar, well-worn, well-bethumbed nineteenth or twentieth century after all. As well have written of Michigan Avenue, Chicago, as "La Rue de la Harpe," "The Great North Road," or the "Appian Way."

It is a masquerade, the novel of the copyists; and the people who applaud them—are they not the same who would hold persons in respect because of the finery on their bodies? A poor taste, a cheap one; the taste of serving-men, the literature of chambermaids.

NEEDED: LIFE AND HEART

To approach the same subject by a different radius; why must the historical novel of the copyists always be conceived of in the terms of Romance? Could not the formula of Realism be applied at least as well, not the Realism of mere externals (the copyists have that), but the Realism of motives and emotions? What would we not give for a picture of the fifteenth century as precise and perfect as one of Mr. James's novels? Even if that be impossible the attempt, even though halfway successful, would be worth while, would be better than the wooden manikin in the tin-pot helmet and baggy hose. At least we should get somewhere, even if no further than Mr. Kingsley took us in *Hereward*, or Mr. Blackmore in *Lorna Doone*.

How about the business life and the student life, and the artisan life and the professional life, and above all, the home life of historic periods? Great Heavens! There was something else sometimes than the soldier life. They were not always cutting and thrusting, not always night riding, escaping, venturing, posing.

Or suppose that cut-and-thrust must be the order of the day, where is the "man behind," and the heart in the man and the spirit in the heart and the essential vital, elemental, all-important, true life within the spirit? We are all Anglo-Saxon enough to enjoy the sight of a fight, would go a block or so out of the way to see one, or be a dollar or so out of pocket. But let it not be these jointed manikins worked with a thread. At least let it be Mr. Robert Fitzsimmons or Mr. James Jeffries.

Clothes, paraphernalia, panoply, pomp and circumstance, and the copyist's public and the poor be-devilled, ink-corroded hack of an overdriven, underpaid reviewer on an inland

paper speak of the "vivid coloring" and "the fine picture of a by-gone age"—it is easy to be vivid with a pot of vermilion at the elbow. Any one can scare a young dog with a false-face and a roaring voice, but to be vivid and use grays and browns, to scare the puppy with the lifted finger, that's something to the point.

LIFE AS IT IS

The difficult thing is to get at the life immediately around you, the very life in which you move. No romance in it? No romance in *you*, poor fool. As much romance on Michigan avenue as there is realism in King Arthur's court. It is as you choose to see it. The important thing to decide is which formula is the best to help you grip the Real Life of this or any other age. Contemporaries always imagine that theirs is the prosaic day, and that chivalry and the picturesque died with their forbears. No doubt Merlin mourned for the old time of romance. Cervantes held that romance was dead. Yet most of the historical romances of the day are laid in Cervantes's time, or even after it.

Romance and Realism are constant qualities of every age, day and hour. They are here today. They existed in the time of Job. They will continue to exist to the end of time, not so much in things as in the point of view of the people who see things.

The difficulty then is to get at the immediate life, immensely difficult, for you are not only close to the canvas, but are yourself part of the picture.

But the historic age is almost done to hand. Let almost anyone shut himself in his closet with a history and Violet LeDuc's *Dictionaire du Mobilier* and, given a few months' time, he can evolve an historical novel of the kind called popular. He need not know men—just clothes and the lingo, the "what-ho-without-there" gabble. But if he only chose he could find romance and adventure in Wall street or Bond street. But romance there does not wear the gay clothes and the showy accoutrements, and to discover it—the real romance of it—means hard work and close study, not of books, but of people and actualities.

AND THE HEARTS OF REAL MEN

Not only this, but to know the life around you, you must live—if not *among* people then *in* people. You must be something more than a novelist if you can, something more than just a writer. There must be that nameless sixth sense or sensibility in you that great musicians have in common with great inventors and great scientists, the thing that does not enter into the work, but that is back of it, the thing that would make of you a good *man* as well as a good novelist, the thing that differentiates the mere business man from the financier (for it is possessed of the financier and poet alike—so only they be big enough).

FICTITIOUS AND REAL REWARDS

It is not genius, for genius is a lax, loose term so flippantly used that its expressiveness is long since lost. It is more akin to sincerity. And there once more we halt upon the great word—sincerity, sincerity, and again sincerity. Let the writer attack his historical novel with sincerity and he cannot then do wrong. He will see then the man beneath the clothes, and the heart beneath both, and he will be so amazed at the wonder of that sight that he will forget the clothes. His public will be small, perhaps, but he will have the better reward of the knowledge of a thing well done. Royalties on editions of hundreds of thousands will not pay him more to his satisfaction than that. To make money is not the province of a novelist. If he is the right sort he has other responsibilities, heavy ones. He of all men cannot think only of himself or for himself. And when the last page is written and the ink crusts on the pen-point and the hungry presses go clashing after another writer, the "new man" and the new fashion of the hour, he will think of the grim long grind of the years of his life that he has put behind him and of his work that he has built up volume by volume, sincere work, telling the truth as he saw it, independent of fashion and the gallery gods, holding to these with gripped hands and shut teeth—he will think of all this then, and he will be able to say: "I never truckled, I never took off the hat to Fashion and held it out for pennies. By God, I told them the truth. They liked it or they didn't like it. What had that to do with me? I told them the truth; I knew it for the truth then, and I know it for the truth now."

And that is his reward—the best that a man may know; the only one really worth the striving for.

LIBRARIES AND NATURE CLUBS IN PARKS

THE American public library is becoming one of the most ingeniously and pervasively active institutions in the world, thanks to the capable men and women who have taken up the profession of librarian. Among the latest new directions of happy public service is the convenient placing of branch libraries in parks.

In a pleasant house among the trees and flowers of Bedford Park, in Brooklyn, N. Y., for instance, are two things that probably do not have their like in the rest of the country —a park library and a children's museum. The library occupies a room or two, whose walls are hidden by high shelves and whose windows look out on green spaces. The books seemed a bit heavy for so charming a place—lives of statesmen, systems of theology and so on. But there was an agreeable number of entertaining books, too, and after all (there are 4,000 volumes) they must be well chosen or the library would never have had the success it has. In the late summer afternoons a continuous procession of book borrowers passed in and out—children and grown people, but noticeably children There used to be two other park libraries in Brooklyn, but the one in Prospect Park was literally killed by success and had to be removed to larger quarters in another part of the city. The one in Tompkins Park still remains. It started with 1,000 books, which in the first six months attracted almost 30,000 transient readers and 2,097 regular borrowers, many of them children. During the first seven months of the Bedfork Park Library about 20,000 persons made use of the reading-room. Of course, the park libraries are open all the year round, but summer is their prime season.

The Children's Museum in Bedford Park, which is conducted as a neighbor and ally of the library, takes up practically the whole building, the park library requiring only two rooms. The museum itself has a library of its own of about 1,650 books, about zoölogy, geology, botany, history and geography and the like. They range from Huxley's works to primers. The walls of the museum are hung with charts, and there are cases of birds and jars of specimens. One jar contains an array of frogs, showing the development of a frog from the pollywog on. Then there are several rooms filled with live specimens—snakes, Gila monsters, caterpillars and the like.

But the peculiar thing about this little museum is the work it does and the keen interest taken in it. Much of its service to the children was organized by Miss Ruth Cook, who has an inspiring amount of enthusiasm. She recently formed a Nature Study Club, with 350 children as members. During the summer she took them almost daily into the park, where she answered questions and tried to arouse an interest in the fascinating life of the world of nature. The children gathered flowers and caught bugs, and from their gatherings a selection was made for the museum. They chased butterflies, caught fish and did anything they liked that brought them in direct contact with nature. Their selected specimens were brought back to the museum, where they were prepared for exhibitio' and study. There is another club called the Humboldt Club that is conducted on much the same plan as the Nature Study Club. But its members are older.

The expenses of the museum are met by that immense educational enterprise, the Brooklyn Institute of Arts and Sciences, which has probably done more educational work than any other local institution in America. The officers of the institute see in the present museum only a slight realization of their plans and only a suggestion of the future. As the park library is free, of course, the museum also and its clubs are free. They are both meant for the benefit of persons, particularly children, who go to the parks for recreation. And people who read books in parks are apt to read sane, healthful books, and in the museum they learn while they play.

MR. KIPLING'S "KIM"

THE printing presses of the world go clashing on month after month turning out the mediocre, the commonplace, the bizarre, the imitation, and after a time we are content with such and are confused and tricked by the noise of much advertising and hired clamor, so that we think that perhaps the enormously popular is of some merit after all. Then, squarely in the midst of all this, true cut as a block of marble, finished and polished as marble, comes such a book as "Kim," and we stand "attention" with hats off, and the little people shrink back to the tiny niches where they belong and we who have condoned them and excused them are left ashamed, and confused before the Master of the Craft.

The story of "Kim" is simple—merely the initial adventure of the hero's career as an agent in the Indian Secret Service. But upon this insignificant peg is hung as rich and strange a fabric of fiction as ever the mind of romancer conceived.

Nowhere in all his books thus far has Mr. Kipling gone so deep or ranged so widely in the vast under-world of India as in this book. The presentation of the living, moving picture of the Great Road along which the lama and Kim travel, the Serai, the strange shop of that strange man Lurgan Sahib, the native compartments in the railway, the forecourt of the Sahiba's house, the Temple at Tirthankers and last and most powerful of all the breathless enormity of the Himalayas—all pictures so vivid that absolutely the last word upon native India seems to have been said.

The *gamin* of India—that is Kim, in his elements the same as the London ragamuffin and the New York arab. Thus far we claim him as a brother; it is not far; it is not much, just enough for one to feel the human kinship —and no farther, and no more. It could not be otherwise; for, oh! the wonderful, complex, strange life of him, and his strange friends, and the devious, *louche*, as it were underground ways of him! But he is the New Boy—the New Boy of fiction, brother to Huck Finn and Tom Sawyer and yet as unlike, as removed, as distant, as the Ganges is distant from the Mississippi.

Other boys will come, many will go, but Kim is to stay. By just so much is the reading world the richer, and we can all from now on count one more friend—"the little friend of all the world."

It is the Oriental expression of exactly the same qualities that one finds in the street boy of London, Paris or New York that is the wonder of Kim. He is not only a shrewd, quick-witted, resourceful boy, but his shrewdness, his quick wit, his resource are those of the Oriental. In this is a great achievement of Mr. Kipling. If he had merely made such a boy of his own race it would be a matter of surprise, but to understand — to the very bottom—the hard little, crude little, contradictory little heart of a boy, and to get at it below the perplexing mysterious externals of the Indian life in which it has its being—there is the great thing that Mr. Kipling has done. And the portrait is so vivid that for all its unfamiliarity one knows it to be true.

And then the troop of minor people—one is compelled to call them minor—for the wonder work of Kim himself dwarfs all else besides—that follow after! Mahbub-Ali, the horse dealer, with the dyed vermilion beard, the Sahiba, garrulous, scheming, shrill and strident, softened and made lovable at the end by the development of the mother affection for Kim; the old lama, the dear, child-like, innocent old lama; Lurgan Sahib—healer of sick pearls—a new portrait in the Kipling gallery—and above all the Babu, the Babu Hurree. Of all the men in the book he is the best, of all the Kipling people up to now he is one of the most successful. Ambitious for the F. R. S., a student of ethnology, able to quote Herbert Spencer; yet frightened at Huneefa's magic. Hear him speak (Huneefa is at work upon her magic over Kim's drugged body). "'I—I apprehend it is not at all malignant in its operation!' said the Babu watching the throat muscles quiver and jerk as Huneefa spoke. 'It—it is not likely that she has killed the boy? If so, I decline to be witness at the trial. * * * What was the last hypothetical devil mentioned?'"

(Mahbub here says that the devils invoked are not friendly to the Babu's ilk.)

"'Then you think I had better go?' said Hurree Babu, half rising. 'They are, of course, dematerialized phenomena. Spencer says——'"

And here he is interrupted. An article might be written on just that Babu. He is India in transition, and his humor and his strange courage (he calls himself, and justly, "a fearful man," yet, how he plays the Great Game with the two Russian spies who would slit his throat for a turn of the hand), and his contradictions and consistent inconsistencies are nothing short of superb.

In the matter of picture-making it is to the Himalayas that the mind harks back the first of all when the book is closed. Nothing better, nothing more impressive, more truly great, has come from Mr. Kipling's pen than this gigantic panorama, Kedarnath and Badrinath—these are the two greatest mountains in sight of Kim and the lama as they toil upward. Let experienced mountaineers judge how true is the effect of these lines—and what an impression of vastness they convey!

"But for all their marchings, Kedarnath and Badrinath were not impressed; and it was only after days of travel that Kim, uplifted upon some insignificant ten-thousand-foot hummock, could see that a shoulder-knot or horn of the two great lords had—ever so slightly—changed outline."

If one began to quote from the book there would be no end. To quote what is good would practically be the setting down of the whole story. This, however, at random:

"Above them, still enormously above them, earth towered away toward snow line, where from east to west across hundreds of miles, ruled as with a ruler, the last of the bold birches stopped. Above that, in scarps and blocks upheaved, the rocks strove to fight their heads above the white smother. Above these again, changeless since the world's beginning, but changing to every mood of sun and cloud, lay out the eternal snow. They could see blots and blurs on its face where storm and wandering Wullie-wa got up to dance. Below them as they stood, the forest slid away in a sheet of blue green for mile upon mile; below the forest was a village in its sprinkle of terraced fields and steep grazing grounds; below the village, they knew, though a thunderstorm worried and growled there for a moment, a pitch of twelve or fifteen hundred feet gave to the moist valley where the streams gather that are the mothers of young Sutluj."

It is such passages as this that only the author of the "Plain Tales" and "Many Inventions" has given us in this generation of writers.

A SHORT GUIDE TO NEW BOOKS

English Politics in Early Virginia History

Mr. ALEXANDER BROWN, following his other books on early Virginian history, in this volume attempts to show that the germ of the American Republic lay, in reality, in the Virginia charters of 1609 and 1612, granted to colonists of the Patriot Party to found a popular Government in the New World; that to Sir Edwin Landys and the Patriot Party belong the credit for founding and developing under those charters a free colony; that James I and the Court Party succeeded finally in reducing the colony to dependence; and that, through the suppression of historical evidence, and by the publication of erroneous histories—notably Captain John Smith's—a false idea of the Patriot Party and its work has been handed down to us by successive historians. He covers the ground with care, keenly scrutinizing the pretensions of James and the Court Party, and appealing from the historiographers of the Court to the evidence contained in the records of the Patriots. Though a somewhat one-sided treatment of the subject—for Mr. BROWN is an advocate rather than an impartial judge—the book is decidedly stimulating, and is of permanent value. (Houghton, Mifflin. $2.00.)

The Abandoned Farmer

Mr. SYDNEY H. PRESTON'S "The Green Pigs" was a story brimful of whimsical humor. This gently-flowing tale by the same author has sporadic bubblings of the same quality; but in the main he has so diluted his characteristic excellence that the whole book suggests a sort of pale Frank Stockton. A town-weary journalist hires a farm upon which he lives contentedly, despite occasional ludicrous mishaps. At length after a discovery of oil—which turns out to be kerosene, with which the well hole has been "salted"—the journalist buys the farm. A tramp who becomes hired man brightens the narrative. Through prodigality of

inconsequent details the book falls below the writer's possibilities. Yet, though deserving no higher praise, it is readable. (Scribner's. $1.25.)

J. Devlin—Boss

Mr. FRANCIS CHURCHILL WILLIAMS'S "Romance of American Politics" is a book of some importance, not so much because it tells an entertaining story, though it does that too, as because it presents a capably drawn picture of a flesh and blood politician. The best-known boss is the boss of caricature, a sinister abstraction resembling the real politician no more closely than a caricature of a trust resembles the amiable gentlemen who gather at directors' meetings. Mr. WILLIAMS'S boss is "Jimmy, whose heart was overbig for his plain, strong body, this as well as the Jimmy whose tireless brain wove the political destinies of a city's thousands"—the real boss. Jimmy's divergences from the path of good citizenship are not glossed over, and, though Mr. WILLIAMS treats him very sympathetically, his good qualities are not so exaggerated as some persons might believe who have never known some "gentle pirate." The narrative takes him from office-boydom on a newspaper, through minor campaigns and a great Presidential convention, to the position of boss of a large city and, finally, to his political downfall. Two love stories are deftly woven into an interesting plot, one of which is delicate, the other surprisingly crude—a regretable flaw in a book, which, notwithstanding, has a keen human interest. (Lothrop. $1.50.)

THE MONTH'S MOST POPULAR BOOKS

REPORTS from book-dealers in Cincinnati, Albany, Toronto, Boston, Philadelphia, Louisville, Dallas, St. Paul, Pittsburg, Washington, St. Louis, Rochester, San Francisco, Indianapolis and Kansas City, and from librarians in New York, San Francisco, Bridgeport, Jersey City, Springfield, Detroit, Hartford, Brooklyn, Kansas City, Minneapolis, Chicago, Cincinnati and Los Angeles combine into the following lists showing demands for books:

BOOK-DEALERS' REPORTS

1. The Crisis—Churchill. (Macmillan.)
2. Truth Dexter—McCall. (Little, Brown.)
3. Tarry Thou Till I Come—Croly. (Funk & Wagnalls.)
4. The Puppet Crown—McGrath. (Bowen-Merrill.)
5. The Helmet of Navarre—Runkle. (Century.)
6. Graustark—McCutcheon. (Stone.)
7. The Octopus—Norris. (Doubleday, Page.)
8. Alice of Old Vincennes — Thompson. (Bowen-Merrill.)
9. The Tribulations of a Princess—Anon. (Harper.)
10. A Sailor's Log—Evans. (Appleton.)
11. Jack Raymond—Voynich. (Lippincott.)
12. Monsieur Beaucaire—Tarkington. (McClure, Phillips.)
13. The Visits of Elizabeth—Glyn. (Lane.)
14. Like Another Helen—Horton. (Bowen-Merrill.)
15. Katherine Day—Fuller. (Putnam.)
16. In Search of Mademoiselle—Gibbs. (Coates.)
17. Penelope's Irish Experiences—Wiggin. (Houghton, Mifflin.)
18. The Heritage of Unrest—Overton. (Macmillan.)
19. The Turn of the Road—Frothingham. (Houghton, Mifflin.)
20. Eben Holden—Bacheller. (Lothrop.)
21. Sister Teresa—Moore. (Lippincott.)
22. The Mills of God—Lane. (Appleton.)
23. The Tower of Wye—Babcock. (Coates.)
24. A Summer Hymnal—Moore. (Coates.)
25. Ralph Marlowe—Naylor. (Saalfield.)
26. A Dream of Empire—Venable. (Dodd, Mead.)
27. The Letters of Her Mother to Elizabeth—Anon. (Lane.)
28. Cinderella—Crockett. (Dodd, Mead.)
29. Your Uncle Lew—Sherlock. (Stokes.)
30. A Carolina Cavalier—Eggleston. (Lothrop.)

LIBRARIANS' REPORTS

1. The Crisis—Churchill. (Macmillan.)
2. The Helmet of Navarre—Runkle. (Century.)
3. Alice of Old Vincennes—Thompson. (Bowen-Merrill.)
4. Eben Holden—Bacheller. (Lothrop.)
5. A Sailor's Log—Evans. (Appleton.)
6. Quincy Adams Sawyer—Pidgin. (Clark.)
7. Truth Dexter—McCall. (Little, Brown)
8. The Octopus—Norris. (Doubleday, Page.)
9. Penelope's Irish Experiences—Wiggin. (Houghton, Mifflin.)
10. The Visits of Elizabeth—Glyn. (Lane.)
11. The Cardinal's Snuff Box—Harland. (Lane.)
12. Up from Slavery—Washington. (Doubleday, Page.)
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18. Uncle Terry—Munn. (Lee, Shepard.)
19. Like Another Helen—Horton. (Bowen-Merrill.)
20. The Gentleman from Indiana—Tarkington. (Doubleday, Page.)
21. Graustark—McCutcheon. (Stone.)
22. The Darlingtons—Peake. (McClure, Phillips.)
23. The Life of Phillips Brooks—Allen. (Dutton.)
24. Every Inch a King—Sawyer. (Dodd, Mead.)
25. In the Name of Woman—Marchant. (Stokes.)
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27. The Tribulations of a Princess—Anon. (Harper.)
28. Babs the Impossible—Grand. (Harper.)
29. The Riddle of the Universe—Haeckel. (Harper.)
30. When Knighthood Was in Flower—Major. (Bowen-Merrill.)

SHORT STORIES OF MEN WHO WORK

A WOMAN WHO "FOUND HERSELF" IN A SEA CHEST

THIS is the story of a young woman who did something with her hands that gave her satisfaction out of all proportion to the concrete value of her work—the artist's satisfaction, which alone makes work worth the while of an ambitious spirit.

She had had the usual high-school education; she had taught; she had passed through the china-painting age; she had done conventional water-colors; she had tried decorative work, screens and fans, and chairs and cigar-boxes—all without doing a single task that was her own. At last she went to the New York Teachers' College and fell among women who were working at manual training. She hammered and sawed and planed and chiseled and.——— found herself.

During the winter her study developed breadth and character. She made a study of old models of woodwork. She saw in a book on colonial furniture the plate of a little box marked 1602. It met her idea and need exactly. She began drawings for a large sea-chest. She would build it on simple, strong lines, and the production would be her own handiwork from the making of the design to the finishing of the woodwork. The model was prevalent in colonial history when sea captains returning from long voyages brought home stuffs and teas from the Orient in heavy timbered boxes, solidly built to withstand the shock of many tempests.

In the summer she was in Ipswich, Massachusetts, to attend Mr. Arthur W. Dow's summer school, whose influence was to be of direct advantage in all her future work. She submitted her scheme to Mr. Dow, and it met his approval. She then undertook to find a workroom, and the village carpenter offered her a bench in his shop. On the morning she arrived at his shop with two pieces of wood under her arm he was struck with her confident air.

"I suppose you're what they call a lady carver," he said. "I suppose the time is coming when women will be as much use as men."

Every day as the news spread through the village that "the old man" had a girl from the city carpentering in his shop, men and women found it convenient to go along that street and look through the door, or stop in for an errand.

She had trouble with her tools. They dulled quickly, lost their edge and chipped off.

An expressman standing by one morning while she was grinding her chisel, felt the situation needed an apology to a visitor also near, to whom he turned:

"I suppose now it looks queer to you to see a woman in this part of the country using a grindstone." To which the visitor replied, "She happens to come from New York."

Desirous of mollifying her, the next time he went by and found her grinding, the expressman said to the girl, "Getting a good edge on it?"

To cap the climax of her endeavors and increase the amazement of the natives, she entered a store one day and asked for a strop and razorine. She wanted to put a final edge on her chisel.

At length the chest was ready for staining. It had been rubbed and sandpapered, and a coat of stain would give the appearance of antiquity. She had spectators even during this process. She had gone over the inside, had stained the edge all around, then fancying that she saw a spot on the bottom that needed retouching, leaned over and brushed energetically. When she rose there was a broad, dark line across her seersucker coat.

One of the seafaring villagers was sitting by interestedly watching the performance. He chuckled when he saw the paint mark.

"That reminds me of Jim Scott. He always thought he was smarter'n anybody else, 'n did things his own way. One day when he was tarring the mast of a schooner he began at the bottom to tar up, and when he had tarred ten feet he looked as if he had been tarring ten days."

When it came time for the hinges of the chest, the girl drew a design to secure the kind she wanted, and interviewed all the blacksmiths in the village, but not one in Ipswich could make her design. As a last resort she went to Salem for the work. The hinges were put on with hand-wrought nails clinched on the under side after the manner of old English chests. It took five weeks of hard work to make the chest, and all except the hinges and the joinery was the handiwork of a woman.

The dimensions of the chest were liberal. It was built of quarter-sawed oak, seven-eighths of an inch stock for the top, front and sides, one and one-half inch stock for the lock panel. The corner posts were three inches square. The pieces in the top, the sides and the back were glued together, the carved front panels were fitted into the grooved lock panel, and the panels were doweled in the posts, or fitted together with dowels. The bottom rail was one and one-half inch stock, and a cleat-piece was fastened on the

inside upper edge. There were fourteen pieces in all. The measurements of the chest were five feet by twenty-two inches, and it was eighteen inches high.

The carving of the panels was an oak leaf conventionalized. The design on the posts was a modification of the acorn, and the acorn motive was used in the hinges, the pattern of the open spaces forming an oak leaf. The finishing touch was an old English crown padlock, an iron antique found in Ipswich.

After the chest was done an old graybeard sauntered in the shop. "Where did you get that box?" he asked. "It must be two hundred years old, a genuine old sea-chest."

HOW PRESIDENT BLANCO NIPPED A REVOLUTION IN THE BUD

GEN. GUZMAN BLANCO of Venezuela, who died last year in France, was a soldier of remarkable ability and undaunted courage, and a diplomat as well. In the fall of 1877, when he was President, revolutionary movements started against him in the State of Carabobo, which, combined with a plot formed in the city of Caracas to overthrow him, might have proven successful, but for his timely receipt of an anonymous letter, and the promptness and tact that he displayed in counteracting it.

When he was leaving the Palace one morning, an officer handed him a letter which he opened and read while leisurely walking towards the main entrance. In this letter the anonymous writer informed him that the movement started against him in the State of Carabobo was simply a blind to draw troops away from the capital to that section, while the real head of the revolution was in the city of Caracas itself, where a plot had been formed to seize the Government the moment the army which General Blanco had prepared and which was ready had left for the seat of trouble. The letter further declared that the man at the head of the entire movement was General Alvarez, who was at that time engaged in the cultivation of coffee, and was residing in the capital.

As he reached the street, he finished reading the letter, and folding it leisurely remained in deep thought a few seconds. Looking up he saw General Alvarez riding by on horseback. Accosting General Alvarez politely, he asked him to dismount, saying that he had a matter of great moment to discuss with him.

President Blanco said: "General, I have been looking for the proper person to command the troops which will march tomorrow to meet the insurgents in Carabobo; and at this moment, upon seeing you, I realize that there is no person better fitted to take the command than yourself.

General Alvarez protested, after thanking the President for the honor of offering him the command. If he should leave the capital at this particular time his private interests would greatly suffer, for the gathering of the coffee crop was at hand, and finding himself short of funds, he was then endeavoring to raise ten thousand dollars to gather the crops upon his plantation.

"Do not worry about that, General," replied the President, "that is too small a matter to discuss when the honor of the State is involved. Go as I tell you and prepare for your departure. Within an hour I will have the sum you need delivered to you in cash, so that your interests may not suffer."

"At four o'clock this afternoon," he continued, "I shall await you in my private office at the Palace to receive my last instructions for the campaign."

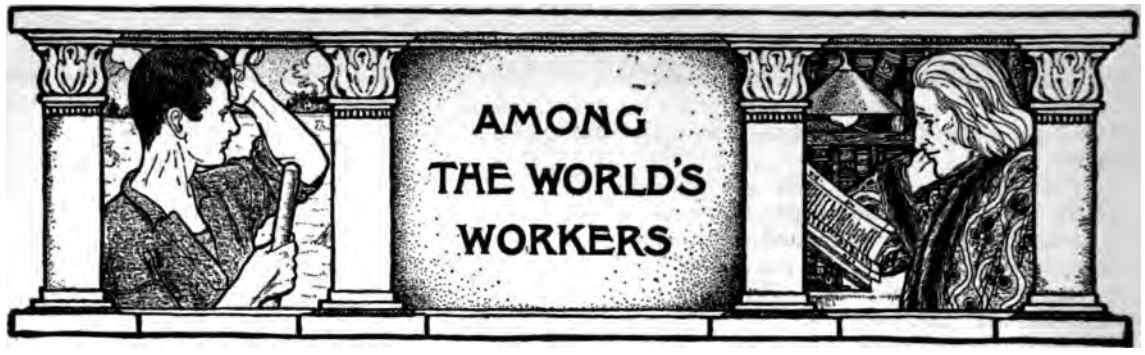
At the appointed hour General Alvarez did not present himself, and President Blanco mounted his horse, and riding to the house of General Alvarez dismounted and entered alone.

He was received by the General with many excuses for not having appeared at the Palace, to which the President replied: "Come, General, we are wasting time; mount your horse and accompany me to the Palace." This peremptory order could not be disobeyed; and upon being asked if he had received the ten thousand dollars, he replied in the affirmative.

Then the President quietly remarked: "By the way, General, I appreciate the sacrifice which you are making for the country; I know perfectly well that the public will feel as deeply as I do the credit due you for this generous act, and believing that it is due the public that they should know at as early an hour as possible that the command of our troops will be in such patriotic hands, I have had a proclamation prepared, setting forth the fact of your voluntary sacrifice, which I know will be received with great satisfaction." "See," he added, stepping to a window overlooking the plaza, "they are even now being distributed, and here is a copy of it."

General Alvarez sank into a chair, realizing that the general impression which would be created among his fellow-conspirators would be that he had sold himself to General Blanco, and that the ten thousand dollars delivered at his house that day was part of the price received for his treachery.

He left the next morning in command of the Government forces, but before he reached the enemy, the enemy had heard of his coming and disbanded. General Alvarez knew that he was under the surveillance of two subordinate Generals, and he realized that he was a helpless tool in the hands of a bolder and abler man than himself.



Workmen as Shareholders in Corporations

THE steel strike has called attention to one method, of which much was once expected, of more closely identifying the interests of corporations and workingmen—the encouragement of the men to become shareholders. Such encouragement has been given by a number of corporations; and in some cases it has had the excellent effect of engendering a feeling of common interest. Naturally the workmen never acquire a great deal of stock in any corporation, yet it is not unusual to find establishments where capital and labor have, to some degree, been merged into one.

For example, when the National City Bank of New York was about to increase its capital stock, it passed the word around to its clerks who, in some cases with the assistance of the bank, bought shares which were then selling at something like 150. These shares are now worth almost five times what they were worth when the clerks bought them. The National City Bank, however, does not pretend to make a habit of giving such chances. It is not a preferred profit-sharing concern, such as the Illinois Central Railroad Company or the Great Northern Railroad Company is.

The system whereby the Illinois Central Railroad enables its workmen to secure a part of its profits operates as a sort of savings bank for the men. On the first day of each month the market value of the shares of the road is registered as the price at which they will be sold to the men during that month regardless of any fluctuations on the market. The stock may be at a high mark or at a lower one on the first of the month, but it remains the same to the men during that month. One advantage of the plan is that the men have the privilege of paying for their stock on the installment plan by making deposits of five dollars or more every month. Upon this deposit they receive four per cent. interest, with the right to withdraw the deposit when they choose to do so.

"Is the system a success?" "Decidedly—'a popular success,'" replied a gentleman connected with the road. "The road employs almost 30,000 workmen. All these men are not profit-sharers, but you would be surprised to know just how many hundreds are. To be sure, they do not own the road, but they do own a part of it, and that inspires them with a fidelity that pays everyone concerned."

The system of the Great Northern Railroad is different from that of the Illinois Central. The Great Northern system was established a little more than a year ago, when $1,000,000 worth of shares (10,000) were set aside for the road's employees. Men who had worked on the road for five years and whose salary did not exceed $3,000 a year were invited to take these shares, paying only their par value. But if the men could have bought shares at par that were selling at a premium, not one of them would have neglected to buy and promptly to sell. The management of the road hit upon a scheme to avoid such a free distribution of wealth at the road's expense by organizing the Great Northern Investment Company, Limited. This company issues certificates to investing employees witnessing their ownership of the shares bought. These are held by the company in escrow, because if they were not so held, the owners would sell them. Then, when the dividend falls due, it is paid to the Investment Company, which distributes it to the holders of its certificates. The company stands ready to redeem its certificates at any time. The system was designed to interest trainmen, and the rank and file of the road's employees.

It cannot be said that the trainmen on either road become rich as a result of either of these systems. But then the system was not established to make them suddenly rich. Its purpose is to help those who have saved a little money and desire to invest it well. The thrifty employee finds himself daily better off, and the feeling that the road's interest is his interest is strengthened. The moral effect is good both on the management of the road and on the men.

To Connect Asia and America by Rail

TO connect the new world with the old by a railroad, with a ferry across Bering Sea, is a long-cherished dream that is likely to be fulfilled within a reasonable time. The combina-

tion of capital of American, Russian and French financiers, who have recently taken up the proposition, seems to foreshadow success. Officials representing the French syndicate, and others representing the Russo-China Bank and the Manchurian Railroad, as well as accredited representatives of the Russian Government, are in the United States in conference with American financiers and railroad managers, and are reviewing the proposed route for a railroad from Alaska to Siberia.

This road is planned to run from Circle City, Alaska, on the American side following a course north of the Yukon River and south of the Arctic circle, to Cape Prince of Wales, the extreme western point of the American continent; thence crossing Behring Strait to Siberia. The same financial syndicate that proposes to build on the American side proposes with the aid of the Russian Government to build also from the east coast of Siberia in a southwesterly direction, connecting with the Trans-Siberian line at Vladivostock, finding an outlet into China viâ the Manchurian Railroad.

The scheme is the beginning of a plan outlined by Mr. J. J. Hill, whose ambition has for years been to open up the markets of the Orient for the products of the western States. Railroading in Alaska is practicable. The White Pass and Yukon Road, now in successful operation, has demonstrated this, and engineers declare that nowhere on the proposed line will so many difficulties be encountered as were found on this line. One of the foreign representatives who has recently been in conference with American financiers here during the past two months, thus describes the plans of the promoters of the road:

"There is nothing impossible about the building of a line from Alaska to Siberia. Indeed, feats of engineering have been accomplished that seemed far more improbable than this undertaking. We have the capital to complete the enterprise. All we want is the assurance from the United States Government that the rights of foreigners will be protected.

"The present plans contemplate the construction of a railroad from Circle City, Alaska, to Cape Prince of Wales, a distance of about 750 miles. The line would follow the Yukon River for about two-thirds of the distance and would pass north of Nome City not more than eighty miles from that thriving mining town. To reach the Siberian coast we would cross Behring Strait, with the aid of powerful car ferries such as are employed by the Russian Government. The distance is not greater than across Lake Michigan, where car ferries are in successful operation. We would lay rails across the many islands in the channel between Alaska and Siberia, and in this manner it would be possible to cross from America to Russia in ten hours, transferring a full train load of freight. From the Siberian coast we contemplate the building of about two thousand miles of road, reaching Vladivostock, and there connecting with the Trans-Siberian road and the Manchurian roadway into northern China. Russia is willing to assume the development of her western territory and French and American capital is to build the road.

"Two years after the completion of this road, twenty thousand people from France, Spain, Italy and Germany will settle in Alaska and the development of her wonderful resources will have begun. By that time I believe the population of Alaska will not be far from one million people."

The question naturally arises, Who will profit by it? This is not difficult to answer. The material not only for building a road from some terminus of the present American lines, but for the entire proposed Alaska-Siberian line, must necessarily be obtained in the United States. A line from some point in Manitoba to Circle City would probably be built as soon as the Alaskan line becomes assured. This would be a natural result. Indeed, such a line has already been surveyed. The Canadian Northern Railroad Company has mapped out two routes, one to the Pacific coast, three hundred miles north of Victoria, and another in the direction of Dawson and Circle City. Work on this line is being pushed ahead rapidly, but already the line extends northwest from Winnipeg quite a distance, and an extension to Circle City could be started under the most favorable conditions. With this plan followed out it is not a great stretch of the imagination to see that millions of tons of iron, millions of ties and a vast army of men will be required to complete the undertaking. Following the building of these lines the United States must reap the reward of the development of her possessions in Alaska. Railroad men of the Northwest say that the completion of such a gigantic undertaking would redound to the benefit of the United States for centuries.

The Prevention of Shipwreck by Wireless Telephony

IN a thick fog at three o'clock in the morning on August 12th, the steamer *Halifax*, with 250 passengers and a cargo of freight, went ashore on Minot's Ledge, at the extreme southern end of Boston Harbor. Almost due north, on Egg Rock, Nahant, the other limit of the harbor, the installation had begun of an invention that will enable navigators to avoid such wrecks. We have lighthouses—wonderfully efficient when the fog is not too thick. We are going to have a submarine-signalling system capable of informing a pilot of the location of his ship within five

degrees of absolute accuracy at a distance of fifteen miles from shore under any weather conditions. It is known as the Mundy-Gray Submarine Telephone.

In operation in Boston Harbor it will work in this way. At Egg Rock will be a transmitter and a receiver connected with a tube lowered some fifteen feet in the water; by means of an instrument like the keyboard of a typewriter, a number of bell-strokes will be rung—corresponding with the key pressed—which, from the vibrating submerged bell will be conveyed to the water; and the water (an unsurpassed sound conductor, as anyone knows who has ever listened under water to the rapping of two stones or the chug-chug of a steamboat) will convey the bell strokes to a receiving diaphragm on the bow-plates of the warned vessel. The receiver on shore permits also return signals. A single station of this kind can convey pretty accurate information of position by a preconceived signal system. But there is also to be a station at the famous Minot's Ledge, at the southern lip of the harbor, where the lighthouse was once destroyed in a storm. Thus the whole mouth of the harbor comes within the protected circles made by the sound waves radiating from these centres.

A ship, provided with the proper apparatus, comes feeling its way up to Boston Light in the impenetrable blackness of a foggy night. The captain sits in the pilot-room with an ordinary long-distance telephone receiver at his ear. He bears four faint bell strokes, deep: that is the bell at Minot's Ledge. A minute later he hears three faint bell strokes, high: that is Nahant. He examines the sound chart, with which all vessels installing the system are provided; and he finds the exact position in which he must be to hear one bell a minute before the other. Shifting his course a bit he finds that he hears both bells at the same time: he is midway between the signal stations. Thus it will be possible for a ship to come up Boston Harbor at full speed in the blackest of storms with as great certainty of its position as if it were daylight.

Only two lines of steamers have yet been furnished with the apparatus, and Boston is the only port where the apparatus is yet tried. It is wireless telephony. It rings, one may trust, the farewell of a large class of marine disasters.

To Banish the Kitchen

THE era that sees the horseless carriage may yet have the kitchenless home. Many of the household duties of our grandmothers, such as spinning, weaving, brewing, and the washing of clothes, are now either partly or wholly performed outside the household; and experiments lately made in Boston suggest the possibility that cooking of food may pass from the domestic kitchen to the caterer's shop. The Committee on Domestic Service of the Boston Branch of Collegiate Alumnæ, deciding that the servant problem hinges on the diminution of housework, and fixing on household cooking as the point of attack, investigated the comparative cost of food cooked in the kitchen and ready-cooked food bought outside. If it should be found, that food equal in quality to home-cooked food could be furnished as cheaply, not only would the vexed cook question be solved, but the first step would be taken toward sending the kitchen to follow the smoke-house and the range to follow the spinning-wheel and the loom.

The results of the investigation open a suggestive vision. By scrupulous computation of every detail of cost—labor, material and fuel, the committee demonstrated that baker's bread at 5.55 cents a pound is the only food article more cheaply bought than made: to make a pound in the kitchen costs 5.865 cents—a little over a third of a cent more. It may be remarked, however, that home-made bread is usually of a better quality. Meat, in the form of turkey and chicken, were found to be cheaper when cooked at home —24 cents as against 35 cents a pound for the turkey, 26 cents as against 35 cents for the chicken. Experiments on a larger scale were conducted in November, 1899, and May, 1901, by clubs of from eight to fifteen persons living for alternate periods on home-cooked food and purchased food —most of the latter from the New England Kitchen, where cooked food is sold at a minimum of profit. In November the food prepared at home cost 16½ cents a meal; that bought outside, 25½ cents: in May the figures were 15 and 19½ cents. Not only was the home-cooked food considerably cheaper, but it gave better satisfaction. It seems plain, then, that on the ground of expense alone no change may be expected in household economy until the supplying of cooked food shall become so widespread a business as to reduce prices considerably. But other elements must be considered. To many people the time spent in cooking and the necessary annoyance easily offset any gain in cheapness; for others the banishment of cooking would settle unpleasant servant problems; to others still the opportunity to purchase even a large part of the food supply outside—as ice-cream is frequently purchased now—would be an appreciable boon. Evidence secured by the committee showed that these considerations have greatly increased the cooked food business of late, and that less and less are people placing entire dependence on the home kitchen. Even now in families where time and bother are considered more than pennies, the kitchen is no longer a necessity. With the inevitable cheapening of cooked food, the increase in its use seems also inevitable. We may yet be kitchenless.

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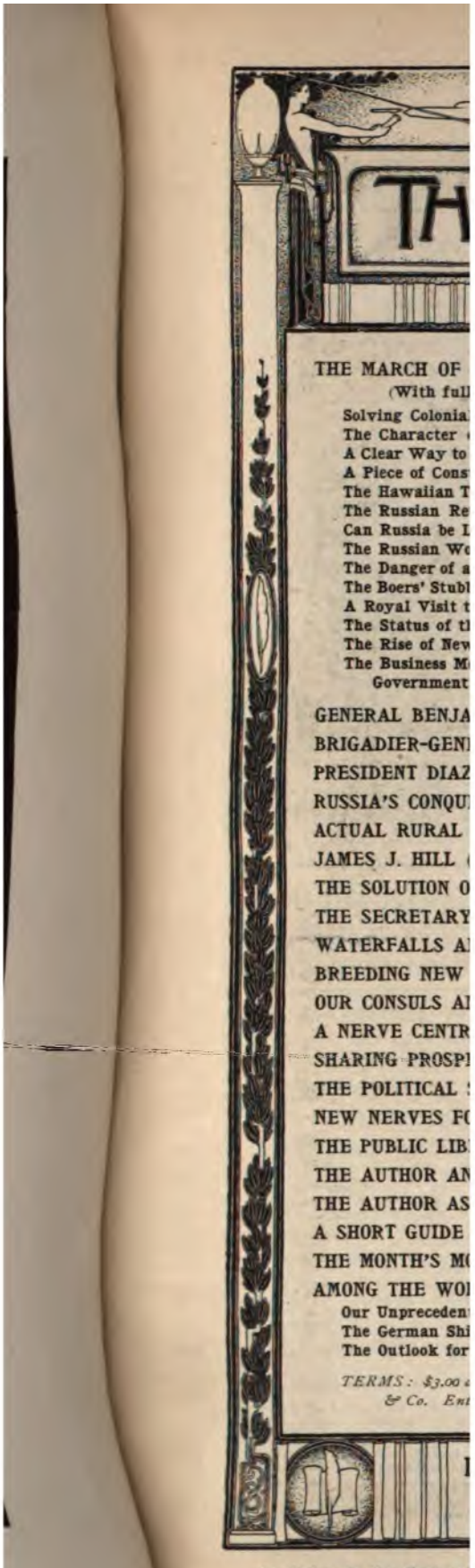

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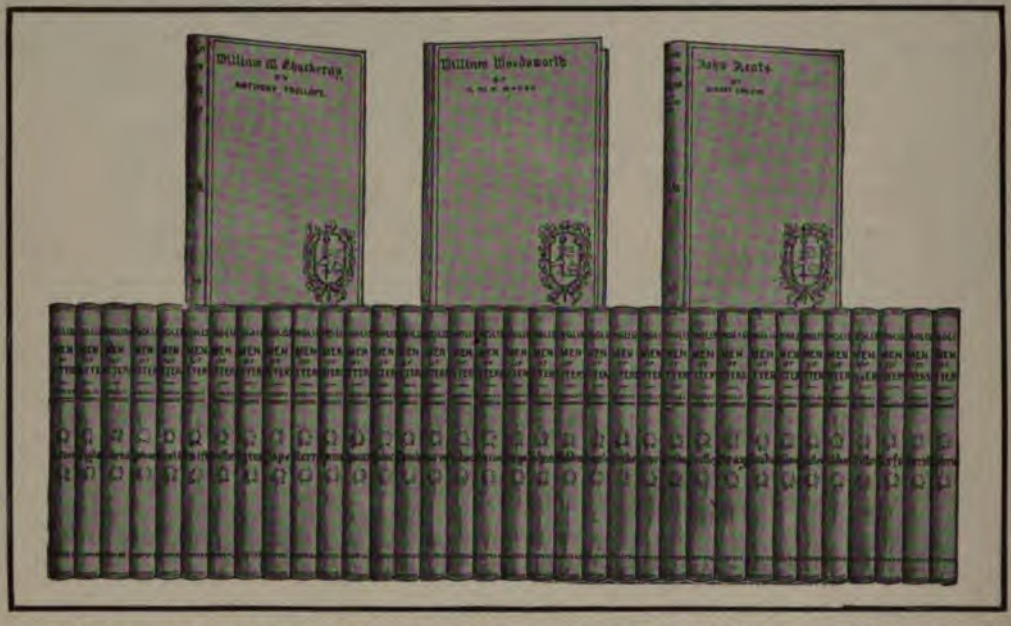

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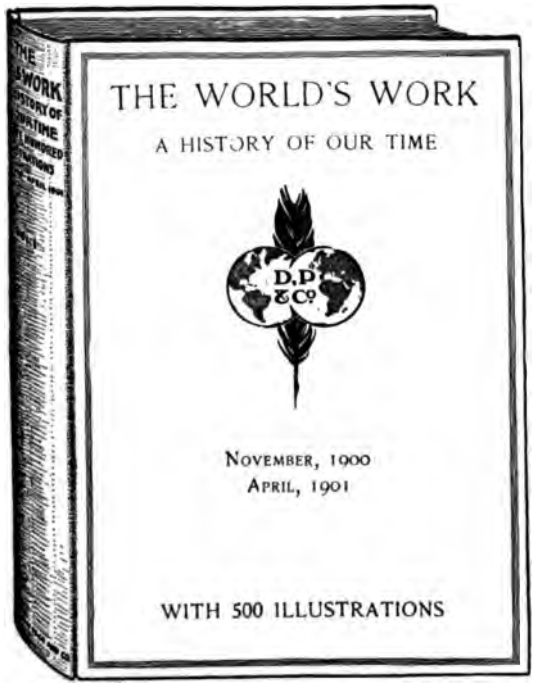

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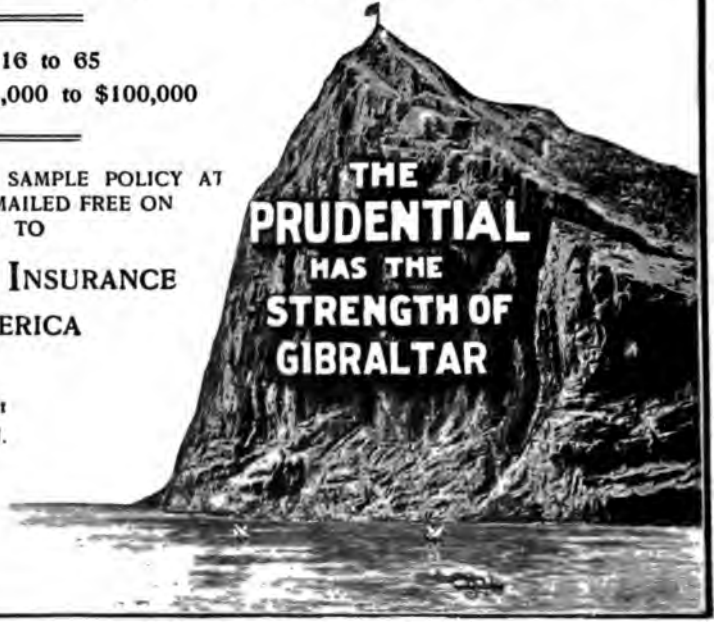

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EVEN "Harnessing the Sun," as described in THE WORLD'S WORK for April, is not more marvelous and certainly not nearly so potent in present industrial application as is the discovery of a process of steel making which cuts the cost of production over one-half. For this is pre-eminently the Steel Age, in distinction to those old prehistoric Stone and Bronze Ages, of which the scientists tell us, and the Iron Age, which is even now disappearing before the triumphal progress of its successor. One might almost suppose that modern civilization, like the tall buildings, is created around a steel frame. As a recent writer says, "steel has now come to be the basis of all material progress," and this is no exaggeration of a material which is all the time entering so many fields of usefulness. Already we depend on it for thousands of articles of daily use, ranging from a pressed steel freight car to the gossamer-like hair spring of a watch; and the United States alone produces some fifteen million tons a year, worth, probably, four hundred millions of dollars! It does not take much penetration to see the possibilities of an industrial process which cuts in half the cost of steel production. This new marvel yields from steel "scrap" a product so strong that it will stand a strain of 73,000 pounds to the square inch before breaking and so hard that it will take the sharp edge of the cold chisel or the hatchet without forging. And it comes to this state of great industrial efficiency, not by the expensive process that gives to American tool steel a cost of nine cents a pound and to Jessup's English bar a cost of fourteen cents, but by the direct and simple process of melting and casting which reduces the cost to three and one-half cents a pound.

The name given to the product of this new process is Jupiter steel. The process is now in operation at the large plant of the United States Steel Company at Everett, Mass. A few weeks ago the writer saw all sorts of steel scrap, borings from a gun factory, clippings from boiler plate, broken wheels and crank shafts, in fact all kinds of waste and junk, if that can be applied to old steel, turned into bright, new tools in a few hours with only the furnace and the mold as intermediaries. Worthless scrap made into useful tools by direct casting—that is the net result of this process. As one saw the change actually being wrought it seemed as if an ingenious Yankee had at last been let into some of the

HERE JUPITER STEEL IS MADE

secrets for which the old alchemists sought. How Tubal Cain would raise his thewy arm in amazement could he know that the plough share he hammered into shape could now be cast in a mould without tempering or forging and all ready for its work, save the sharpening.

This Jupiter steel is a composition after a formula that is covered by patents, both in the United States and in most foreign countries. The process was worked out by H. B. Whall of Boston and A. G. Lundin, a Swedish worker in steel. These men discovered that by adding certain ingredients, at a fixed point, in the melting of scrap steel, a product resulted which had every quality of the best steel. It was homogeneous; it would weld perfectly; it could be made hard or soft as desired; it had a tensile strength of 73,000 pounds, government test; it could be produced in two hours; it took a fine tool edge. Put to one of the severest steel tests, in the shape of a cold chisel, it repeatedly excelled the quality of all other bar steel and without any tempering whatever. It seemed to be a product, in short, that would have a large part in the future of steel making.

In September, 1899, the United States Steel Company was formed to acquire the patents and put Jupiter steel on the market. A tract of land in Everett, having a frontage of a half mile on the Malden River and stretching back from the river nearly a quarter mile to the Boston & Maine Railroad, was bought, and a large modern steel plant erected after plans by E. G. Spilsbury, of New York, long president of the American Institute of Engineers. The strategic value of this location is at once apparent, for the thousands of factories in New England are both mine and market. From them the steel scrap comes in abundance and to them Jupiter steel goes back in tools and machinery. Over 700 manufacturers have become customers of the plant. If any part of their machinery breaks the pattern for it is hastened to Everett and a steel casting of it soon returns. Not long ago in the great Amoskeag Mills at Manchester, N. H., a cross head on a large engine broke. Had an order gone to Pennsylvania mills to have it replaced, three weeks or a month would have been required, and time means money and a great deal of it in a concern with over 3,000 employes. The pattern maker went down to Everett, had a change or two made in the pattern, and in a few days a new steel casting was back in Manchester to replace the broken one.

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quires old steel as its raw material. But it is in just such ways that some of the most astonishing edifices of modern industrialism have been built up! Some man has discovered how to utilize "waste" products, and these formerly neglected materials have often proved more valuable than the original production. Moreover, there is a beautiful sort of "endless chain" about it; there is almost an unlimited quantity of old steel in the world, and it is necessarily added to each year. Converted into Jupiter steel it becomes renewed, rejuvenated, transmuted into new forms, and enters upon a fresh career of usefulness. It comes perilously near an immortalization, this! Not perpetual motion, but to all intents and purposes perpetual value and efficiency.

As showing the wide range of the work being done at the great plant in Everett, late in March, castings were being made of gears and other parts for the Carnegie Rolling Mills, of driving wheels for Manchester Locomotive Works and Boston & Maine locomotives, of a stern bracket weighing five tons for the ocean going steamship Prince George, of gun pivots for the cruiser Olympia repairing at Charlestown Navy Yard, of various parts for the new plant now being built by the Fore River Ship and Engine Company of Quincy, Mass., which has the contract for building two battleships and of an endless variety of things, small and great, from factories throughout the East.

Jupiter steel is also being cast into a large line of tools and dies, for which a strong demand has been created. But the specific thing at present, which the company is chiefly devoting itself to making, is the Neal-Duplex brake, declared by competent experts to be a perfect power brake. It is now in daily passenger service on the cars of the Boston Elevated Railway Company, and has been ordered by the Worcester Suburban Street Railway, the Brockton Street Railroad and the Marlboro Street Railroad. This brake requires no power except that generated by the axle. It will stop a car quicker than any other brake and do it without perceptible jar or jerk. It weighs less than 500 pounds and can be attached to any form of truck. All parts of this Neal-Duplex brake are made from Jupiter Steel castings. As the United States Steel Company owns the patents on the brake and also the patents on Jupiter steel, it is in position to make the two-fold profit on both raw material and finished product. To make this profit, which awaits only the manufacture of the brakes in quantity, the Company must at once increase its productive capacity. The

CORNER IN BOSTON OFFICES OF UNITED STATES STEEL COMPANY

Directors, therefore, have ordered the sale of 10,000 shares of treasury stock at its par value of $5 per share to provide the working capital for the manufacture of the brakes. In this connection it should be stated that the Company has paid quarterly dividends at the rate of twelve per cent. per annum on its stock since December, 1899. With the facilities provided for the manufacture of the Duplex brakes these dividends can be increased. The Company's stock capitalization is 600,000 shares of a par value of $5 per share. Of these 263,480 remain in the treasury, to be sold as occasion requires.

It is interesting to note the significance of stock purchases, for they nearly always have been, in quantity, in direct ratio to the knowledge acquired by the purchaser of the company's affairs. An investor who will write about the purchase of twenty or thirty shares will buy 200 or 300 shares after an inspection of the company's plant, its patents and its growing business.

At Everett the company owns 3,200,000 square feet of land and have both rail and water transportation. On this land a modern plant 200 by 130 feet has been built, with powerful electric cranes, furnaces, drying ovens, gas producers, boiler and power house with dynamos, sand blast, crucible plant, finishing machines, office buildings, etc.

A cordial invitation to inspect the plant at Everett is extended to all who are looking for safe and legitimate investment. Those who cannot do this will have any information desired sent to them promptly upon application to the Boston office of the United States Steel Company, 149 Oliver street, Boston. The United States Steel Company, organized in September, 1899, has no connection with the United States Steel Corporation which was incorporated in February, 1901.

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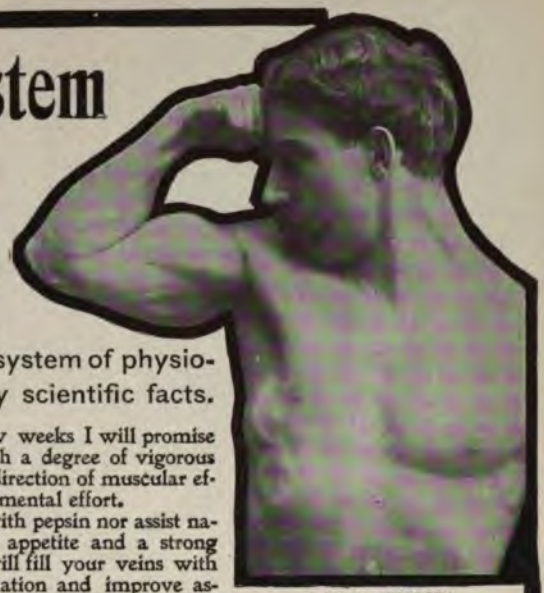

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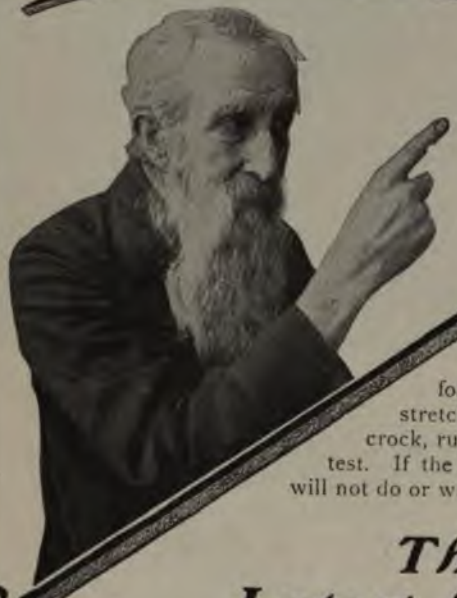

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The four page insert
"A Revolution in Steel A

The Obispo Rubber Plantation
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We can refer to any of our clients a
they think of OUR advertising plans.
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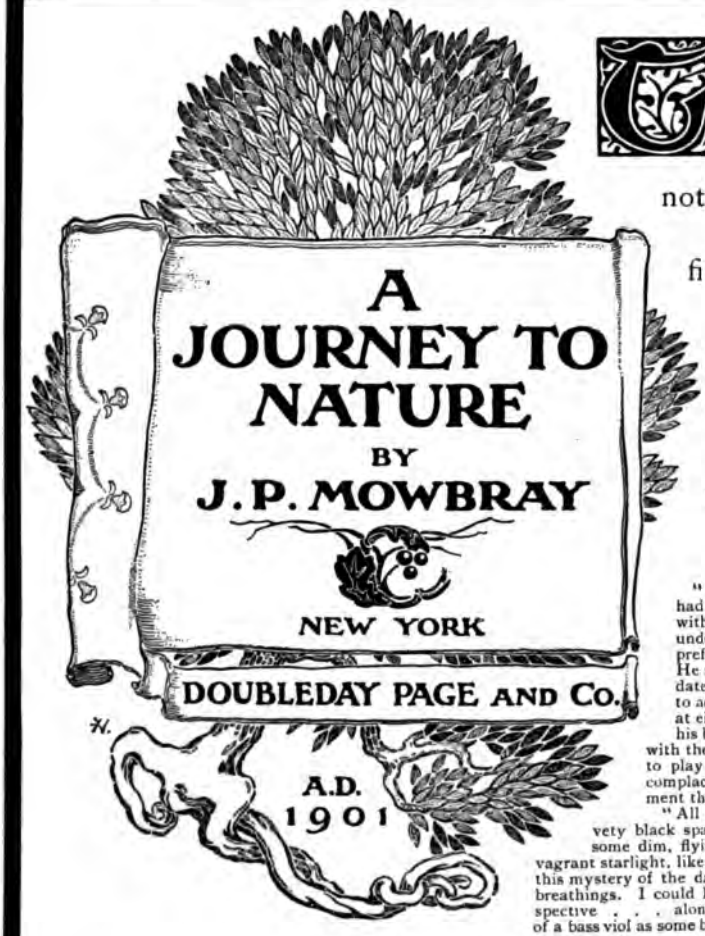

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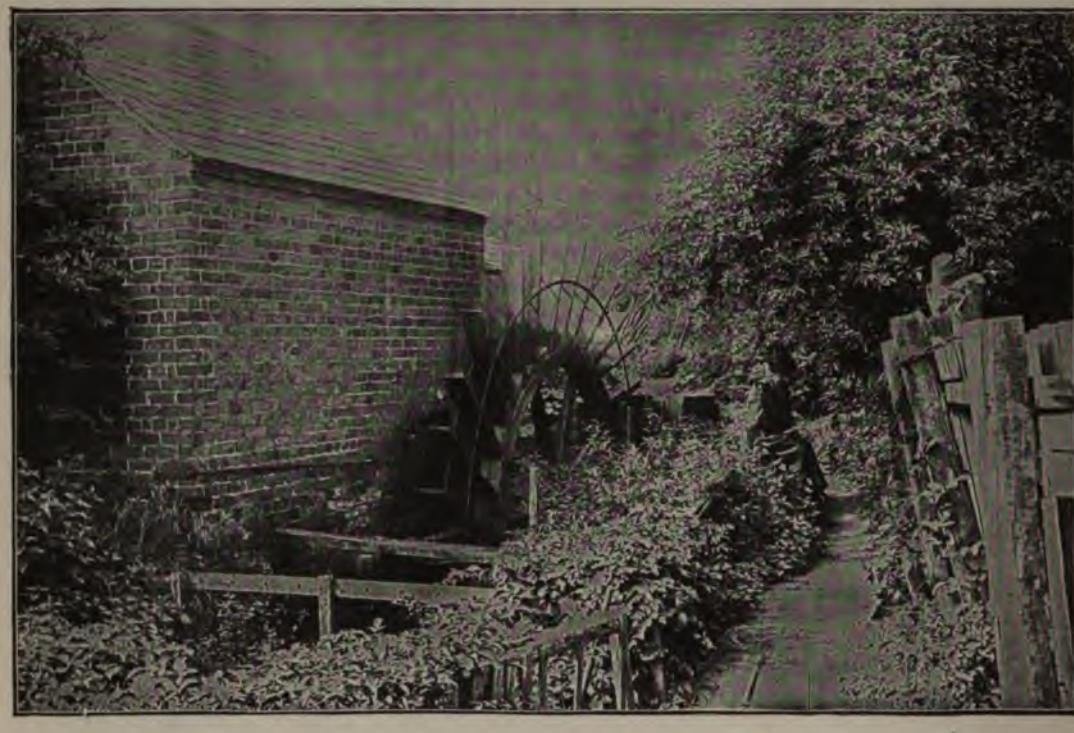

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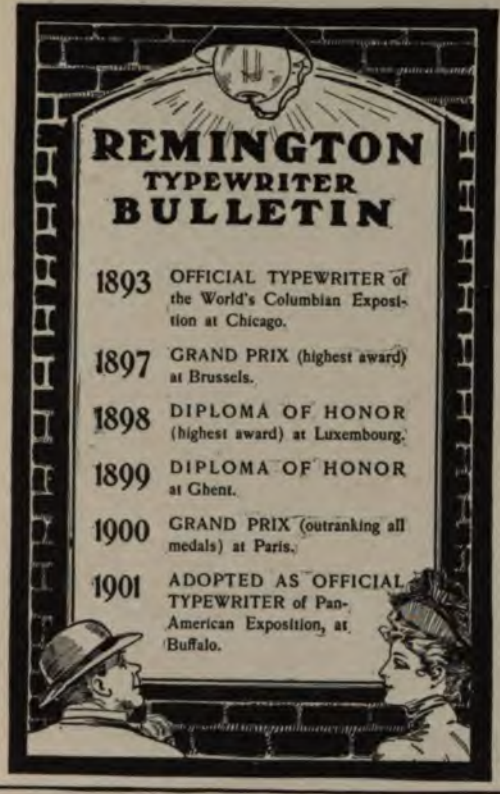

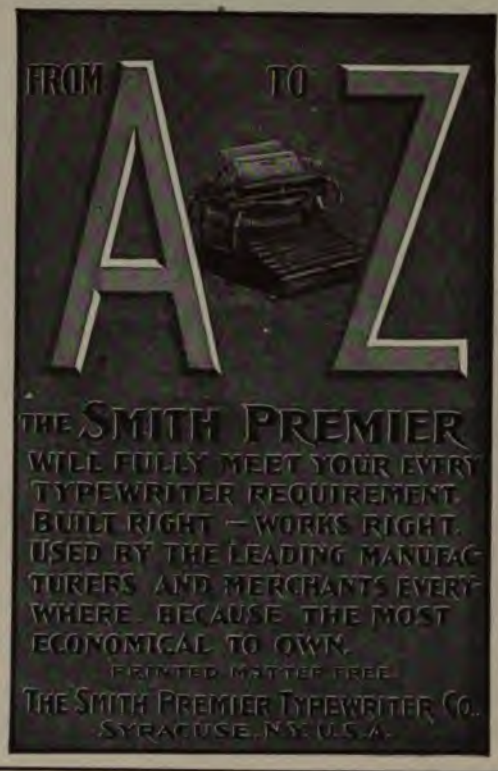

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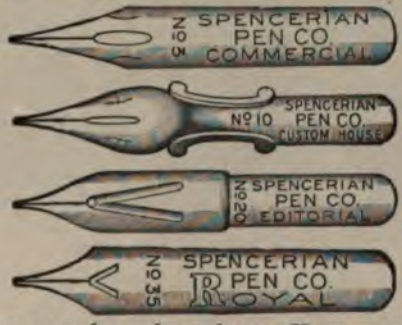

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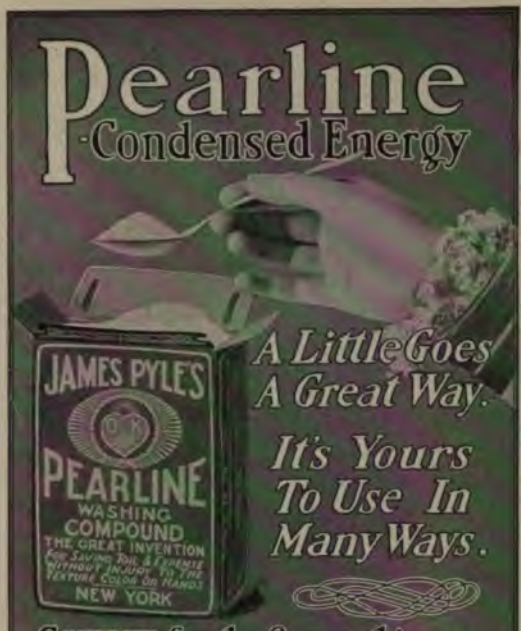

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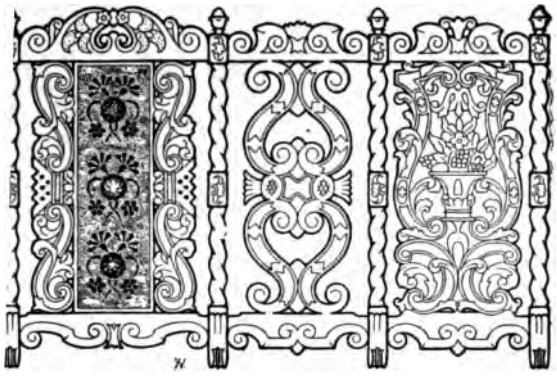

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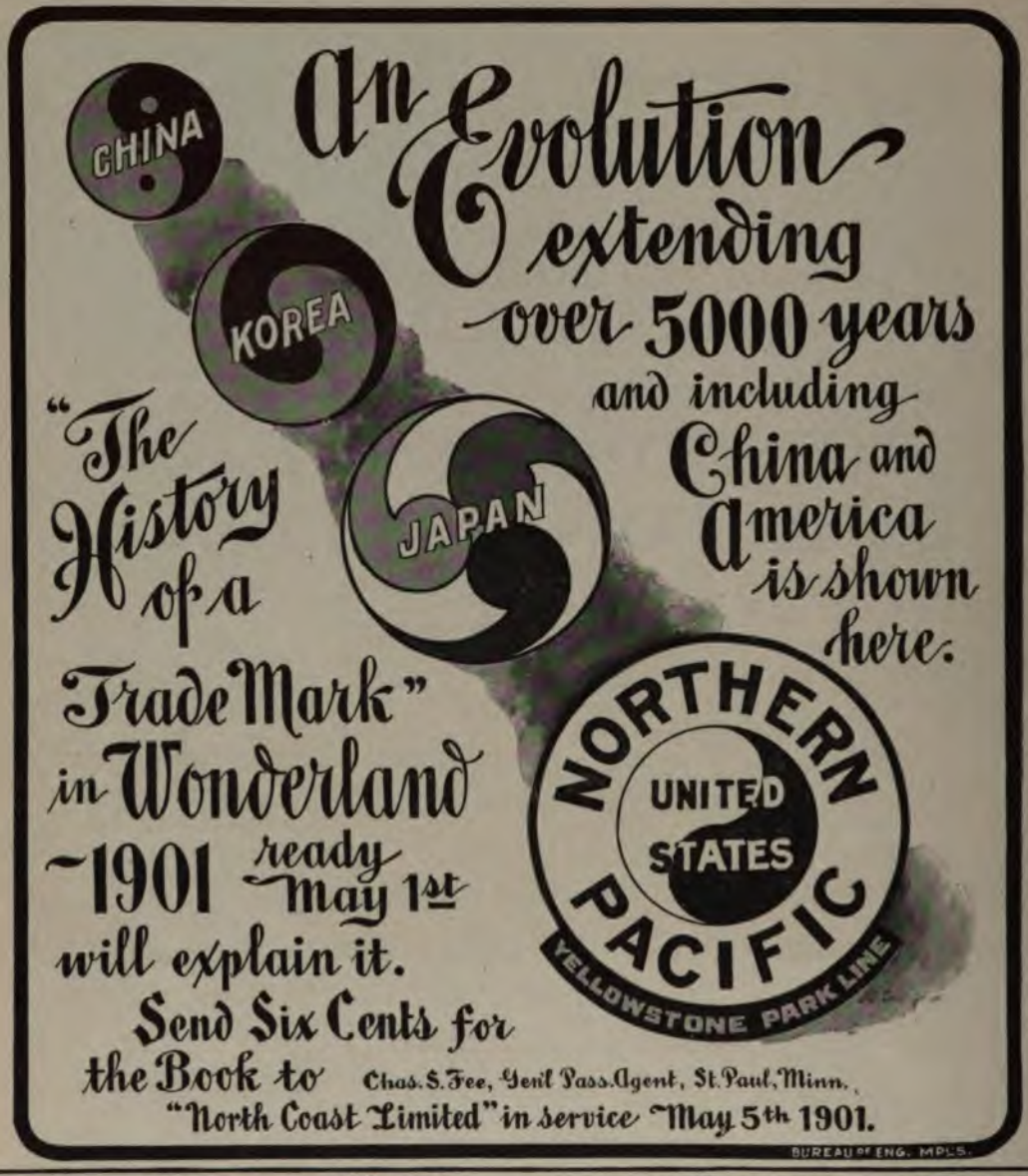

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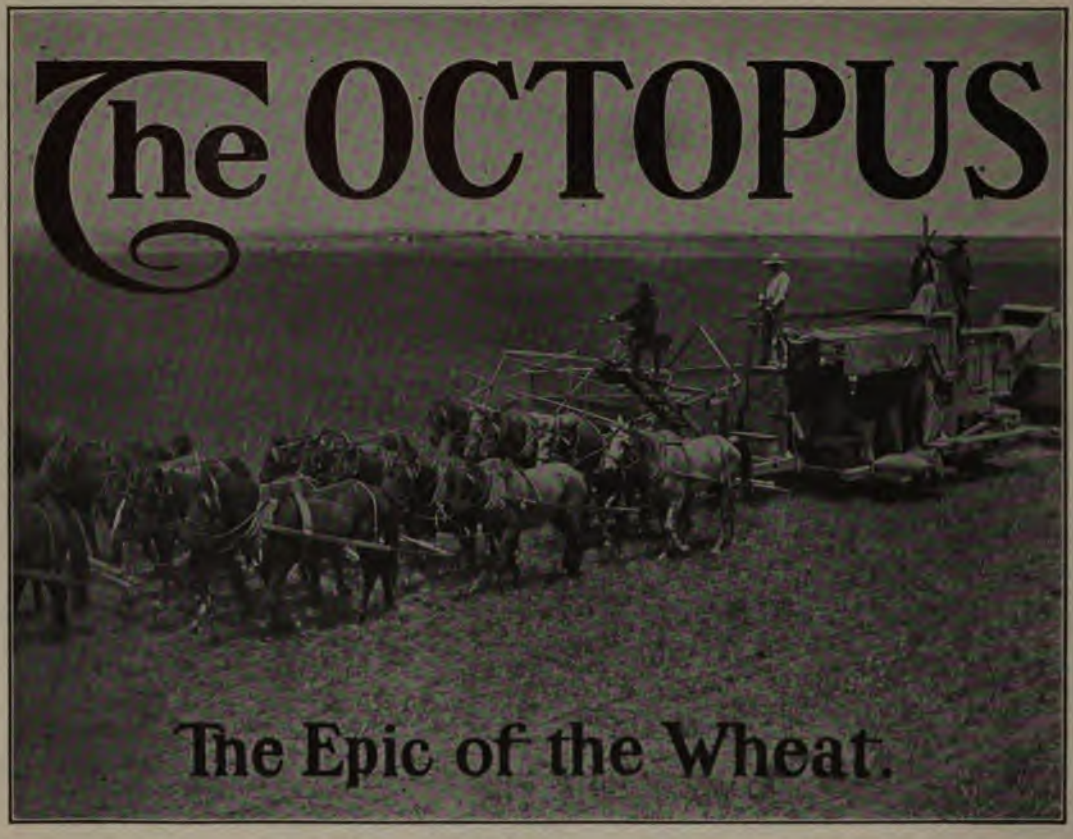

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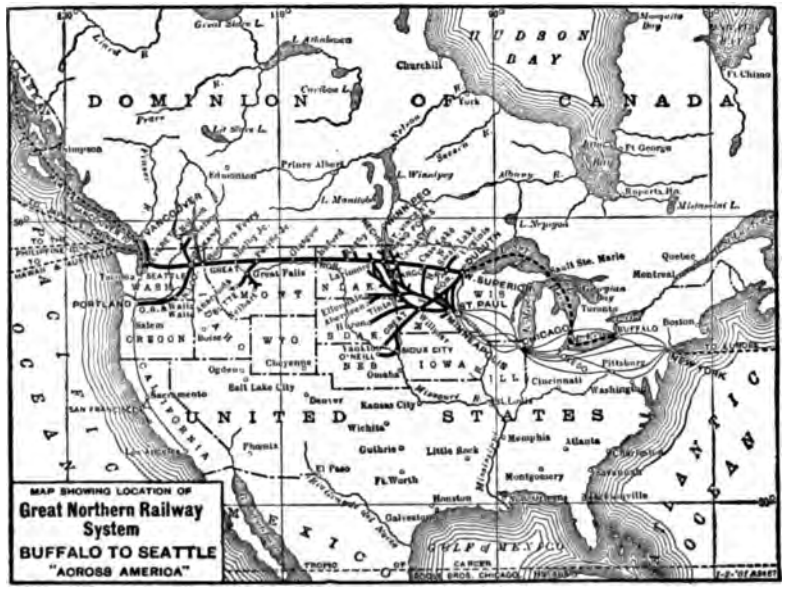

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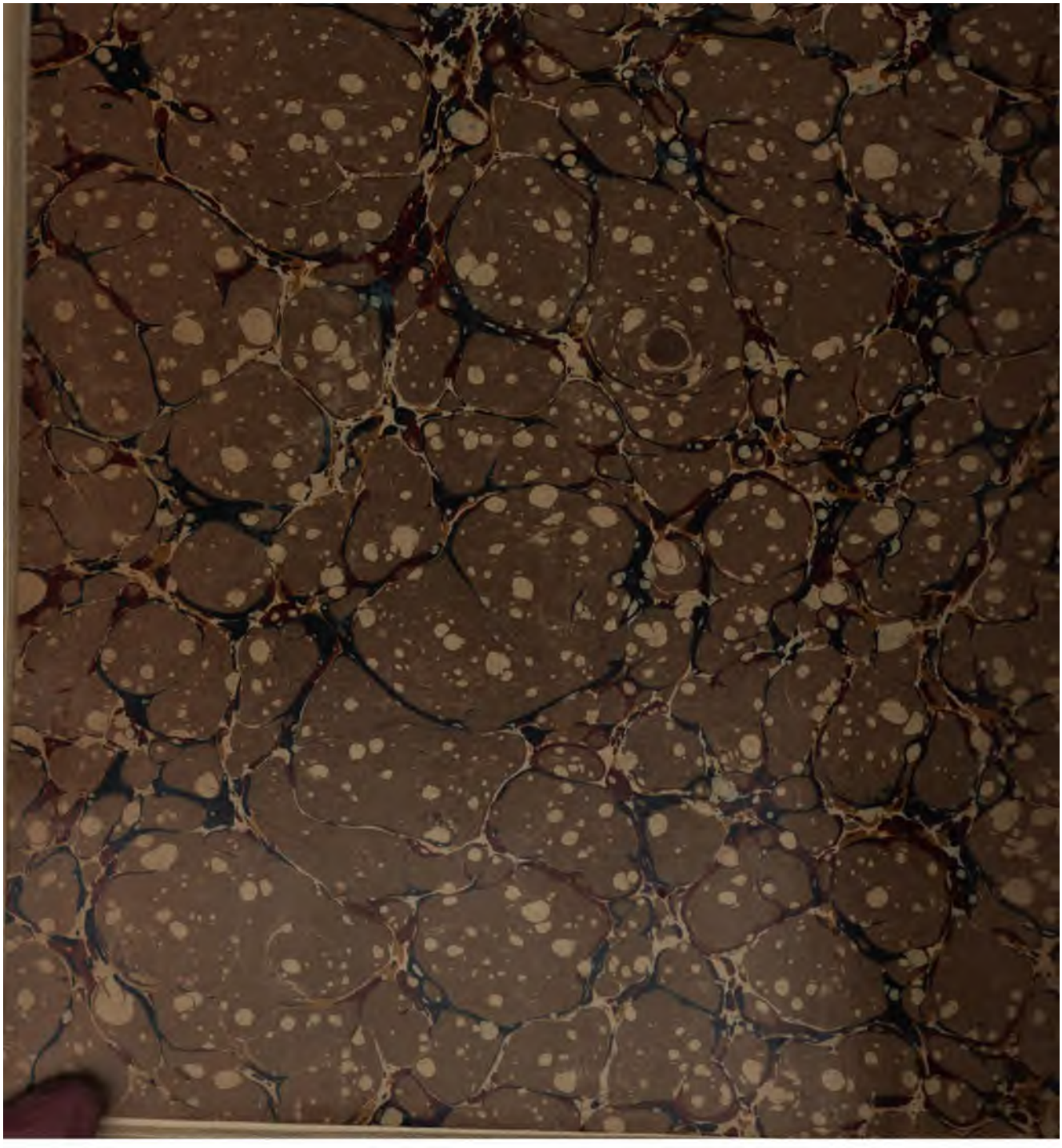

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